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THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

THE HARVEST PROSPECT,

So far as regards winter grain, is gloomy, as much so, we fear, as it was twelve months ago. Our accounts from Virginia, from the middle states, and from the wheat districts of our own state, are all but favorable. The autumn was unfavorable, and the grain did not get its accustomed growth, and good hold of the ground. The spring has been equally unfavorable. The variable, or alternate freezing and thawing weather, has seriously injured the wheat and rye. We are yet to learn what injury this grain has to suffer from the Hessian fly. If we add to this, that the grain worm may be expected to extend its ravages south and west, probably into Dutchess and Ontario, we shall have little cause to expect a better wheat crop than we had in 1836. To show that the crop of 1836, fell far short of our consumption, it is only necessary to state, that there was imported into New-York alone, from Europe, in 1836, half a million bushels of wheat, and in the current year, up to the 19th of April, eight hundred and fifty-seven thousand bushels, making in the aggregate about one million three hundred and seventy thousand bushels of wheat, besides rye and other grain—thus drawing from the country some millions of dollars for bread stuffs, our great staples, which we have been in the habit of exporting to a large amount. Much of this grain came from the Baltic and the Black seas.

Admonished by these startling facts, and by the general commercial distress of our country, which has hardly begun to develope its worst features, it behooves the farmer to husband all his labor and his means, and diligently to employ them in augmenting his summer crops, of grain and of roots. The price of meats have been so high, and the scarcity of forage so great, that our live stock has been greatly diminished, and prudence and good management are necessary to replenish our herds and flocks. Much, in the present and coming years, will depend upon the industry, sagacity and firmness of the yeomanry of our country.

AMERICAN SOCIETY FOR THE DIFFUSION OF USEFUL KNOWLEDGE.

A number of distinguished gentlemen, belonging to different states of the union, formed themselves into a society, in October last, under the above style, somewhat on the model of the British society for the diffusion of useful knowledge. The officers of the society, consist of a president—(Hon. Stephen Van Rensselaer,) thirty-three vice-presidents, distributed among the states, a board of thirty-nine directors, an executive committee of twenty-three, chosen by the board of directors, a secretary and treasurer. Members of the society are required to contribute $5 annually; $100 within any one year, constitutes the donor a life member; $500 a life director, and $1,000 a life member and an honorary member of the executive committee.

The *object* of this association, is, as its title imports, the diffusion of useful knowledge, in all its various departments, among the mass of our population, in a chaste and cheap form; or, to adopt the language of the prospectus, it is, "to elevate the character of our national literature, and raise the standard of morality, by the introduction and more general diffusion of works of intrinsic merit, in belles-lettres, in Christian morals, in the arts, in science, physical, intellectual and moral;—to promote the improvement of our common school education, by providing standard sets of books of instruction for schools, and by procuring and publishing statistics and facts, calculated to illustrate the condition and prospects of education in our own and other countries; to provide suitable works of entertainment and information for children and youth;—to furnish the means of elementary instruction and general knowledge, in their own language, for resident foreigners and their children;—to cherish the general interests of literature, education and religion; of agriculture, of commerce, and of the arts, by preparing appropriate standard libraries of useful knowledge, embellished with illustrative engravings, and embued with a Christian spirit, for families and schools, for the farmer, the mechanic and the merchant, the seaman and the settler in the west," &c. &c.

The society purposes to commence immediately the publication of a district school library for the United States, to consist ultimately of from 50 to 100 volumes of instructive works on various subjects, calculated to interest and benefit the young; and to follow this soon with a library for mechanics, another for farmers, another for seamen, one for children, &c.

The plan of the institution is excellent. The means of carrying it into operation, are expected to be derived from annual subscriptions, donations and bequests; and, if we are to judge from the great good which there is reason to anticipate from its labors, they will be liberal and abundant.

Common school and social libraries, comprising books judiciously selected for their tendency, and for information in the arts of productive labor, are among the surest and best means of diffusing useful knowledge, of rendering labor more honorable and more productive, and of advancing the great moral and political interests of our country. The economy that the society is likely to effect, in the price of useful books, is matter of no little consideration—as the prices will, from the heavy editions required, and from preliminary arrangements with the publishers, be reduced one half from the ordinary standard, at least for the use of common schools. The society invites, and we trust will receive, the hearty co-operation, of liberal minded men in these projects of improvement.

TILLAGE HUSBANDRY.

BARLEY.

Summer barley is the only species cultivated in the United States. Of this there are several varieties, of which the "chevalier," and still more the "Annat," are found superior in Scotland. The naked barley is but partially cultivated here, though it is extensively grown, and highly esteemed on the continent of Europe. It unites very commendable qualities, being hardy in its growth, strong in the stem, tillering with great vigor, and producing abundant crops of very superior grain. It is also well adapted to the making of pearl barley, a process which is now gone into to some extent among us, particularly in Vermont. The quality of the straw is better than that of any other kind; it requires, however, to be sown earlier than any other sort, and only succeeds if grown in a rich and well tilled soil. Von Thaer considers it equal, both in weight and quality, to rye; and its nutritive properties have been found, on analysis, to be even superior.

Soils.—Barley requires a rich, friable and mellow soil. The best, according to Von Thaer's scale, contains 20 per cent of clay, 67 of sand, 3 of lime and 10 of humus; good barley land 38 clay, 60 of sand and 2 of humus; and ordinary from 48 to 68 of clay, from 30 to 50 of sand, and 2 of humus, or vegetable mould. In lands more sandy than above indicated, the crops is liable to suffer from drought.

Cultivation.—Turnips or potatoes, or even Indian corn, are a good preparation for the barley crop, as it requires a well-worked clean soil. In Essex, England, it is sown upon a fallow, which receives the seed furrow in the spring. The seed should always be sown upon a fresh-stirred soil.

Seed and sowing.—It is recommended to steep the seed twenty-four hours in soft water, that the grain may all germinate at the same time, and ripen equally. This is deemed more important when the sowing is late. Light soils may be sown earlier than those

which are heavy. Early sowing is generally recommended; and, in fact, the finest samples of every kind of grain are thus usually produced. We do not specify any particular time, nor quantity of seed, because the time will depend on season and climate, and the proper quantity of seed upon these and other contingencies. It is usual to sow much less seed of all grains in the United States than it is in Great Britain. Our soils are generally inferior in artificial fertility, while, from the warmer temperature, in summer, of our climate, the grain tillers better here than there. It is well to sow barley at least some ten or fourteen days before we plant Indian corn. When clover and grass seeds are to be sown upon barley, it is considered best to let the barley plants first grow above the ground, and then harrow in the grass seeds with a very light wooden-toothed harrow, and follow with the roller.

OATS,

Are a northern grain, particularly adapted to high latitudes and elevated or cold locations. In these they make a better return, and the grain is heavier, than in warmer climates, and in more genial soils. Oat soils are identical with rye soils, neither requiring carbonate of lime, or much clay—though, in regard to moisture, the rye wants a dryer soil than the oat. Oats are grown upon almost all kinds of soil, but make the best return on fresh land and reclaimed moory or swampy soils, and, like every other crop, will repay care and labor. This grain is indigenous to the north. There are many varieties of this grain, of which may be named the common, the Poland, the Dutch, the potato, the Hopetown, the Tartarian, &c. The common kind is the most generally grown, and is the most certain in its product upon poor expended soils. The Poland and Dutch oats have severally had their day in Scotland, and both have been somewhat circumscribed by the potato oat, and these again by the Hopetown and other new varieties. The skinless oats are highly commended in Ireland. In this country they have not been sufficiently tried to judge of their relative profits.

Soil and culture.—Oats, like rye, are seldom sown upon land which will make a good return in a more valuable crop; and yet in many districts they form the most certain and profitable crop. They do well upon land broken up from rough pasture, as they flourish before the sod is decomposed, or the soil is brought into a fit state for finer crops; and are hence often advantageously grown upon a grass ley to precede wheat, in which case long manure may be applied to the oats with great advantage. This is almost the only case in which two crops of small grain may be made to succeed each other with advantage. The practice of seeding down with oats is objected to, on account of the oats shading the ground so much, and being apt to smother the young clover. The Poland and potato varieties require rich ground; and the Tartarian, the black and the red, are best adapted to mountainous districts and late climates. It is thought advantageous to procure seed from inferior ground. Early sown oats are found almost invariably to produce the largest quantity of grain; late sown of straw. They require more moisture in the ground than any other kind of corn; and it is important to have the grain formed before the commencement of the parching droughts of summer. The average produce upon medium soils throughout Great Britain, is estimated at thirty-two bushels per acre, of the average weight of forty-two pounds the bushel.

"In the *mealing process*, the oats, after being previously dried on a kiln, are made to pass through the mill stones, to divest them of their coarser husks before being ground. The kernels are then named 'grits' or 'groats;" and are next ground over again into a coarse rough meal, varying in fineness according to the custom of different districts. This is afterwards baked upon a heated iron into thin flat cakes, or made up with water, usually boiled into a thick consistence, and is eaten either with skimmed milk, butter, molasses or ale. It is thus very generally used as the common breakfast and supper of the greater portion of the peasantry of the northern parts of England, Scotland and Ireland, and forms a very nutritive and healthy food."

"The *indications of ripeness*, in all sorts of grain are few and simple. When the straw exhibits a bright golden colour from the bottom of the stem nearly to the ear; or, when the ear begins to bend gently, the corn may be cut. But—as the whole crop will not be equally ripe at the same time—if, on walking through the field, and selecting the greenest heads, the kernels can be separated from the chaff when rubbed through the hands, it is a sure sign that the grain is then out of the milky state, and may be reaped with safety; for although the straw may be green to some distance downwards from the ear, yet if it be quite yellow from the bottom upwards, the grain then wants no further nourishment from the earth, and, if properly harvested, will not then shrink. These tokens will be found to indicate sufficiently the ripeness of wheat, barley and oats; but that of rye arises from the straw losing some of its golden hue, and becoming pale."—*Br. Hush.*

FORTY-SEVEN YEARS AGO

A society was instituted in this state, "*for the promotion of Agriculture, Arts and Manufactures.*" Among its most active members were Chancellor Livingston, Simeon De Witt, Ezra L'Hommedieu, and others, distinguished as statesmen and patriots. This society continued its labors till 1804, when it became merged in the "*Society for the promotion of the useful arts;*" and at a more recent period, this again was merged in the "*Albany Institute.*" During the existence of the first society, five volumes of its transactions were published, we believe at the expense of the state. These publications, together with the active exertions of the members, gave an impulse to improvement in some of the older counties, which has now placed them at the head of American husbandry. These volumes contain much of interest and instruction. We propose to abstract from them, occasionally, such matters as we deem most important, and best fitted to forward the work of rural improvement.

The first anniversary address was delivered before the society, in January, 1792, by Dr. S. L. Mitchill. It admonishes the farmer to beware of exhausting the fertility of the soil by injudicious cropping; "The time will come, and indeed in many places now is, when the land repeatedly wounded by the ploughshare, and exhausted of its richness, shall be too weak, of itself, to make plants grow with their former luxuriance." The prediction has been woefully verified in many places. Let the *new* counties profit from the lesson. The address happily illustrates the excellence of good tillage, by the following story from Columella:—"Græcinus, in his book concerning vines, relates that he had often heard his father tell of a certain Paridius, who had two daughters, and a farm planted with vines. Of this farm he gave one third part, as a marriage portion, to the man who wedded his eldest daughter, and notwithstanding, received as much produce as before, from the two-thirds which he reserved to himself. Afterwards, on the marriage of the younger daughter, he gave away half the remaining land, and found his income in no respect diminished. What concludes he from this? But that the *third part* of the farm was at length better cultivated than *the whole* used to be before." How many have we now a days, who, like Paridius, might do better by tilling a third than they now do by tilling the whole of their farms. All admit the error of the practice of tilling *too much* land, and yet few seem to profit by their own convictions. The address recommends attention to the saving of manures, though it avoids the then vexed question of "What is the food of plants?" It recommends attention to the manufacture of maple sugar, to the propagation of the locust, (robinea pseudacacia,) and the white mulberry, and the culture of potatoes and hops. It states, on the authority of Sir Joseph Banks, that the Hessian fly is neither known in England or in Germany.

EXPERIMENTS WITH GYPSUM.

We find next in order an interesting communication from Chancellor Livingston, who, we believe, was the first to introduce the use among us, of gypsum, detailing a great number of experiments which he had made in 1789 and subsequent years, with this fossil manure, and also with carbonate of lime, in the form of ground oyster shells and pulverized lime-stone—and stating the results of these experiments. The applications were generally from five to seven bushels the acre. The applications now a days are generally limited to one or two bushels per acre. The Chancellor's experiments go to confirm the opinions we have long entertained, that gypsum is not beneficial upon all soils, nor to all crops. After stating the experiments and their results, the Chancellor draws the following inferences:

"1. That gypsum, in small quantities, has no visible effect on wheat or rye.

"2. That it is uniformly beneficial to Indian corn, unless it be in very rich or very wet soils.

"3. That it is beneficial to flax on dry poor sandy lands.

"4. That it is peculiarly adapted to the growth of clover in all dry soils, or even in wet soils in a dry season.

"5. That limestone pulverized has similar effects with gypsum; whether it is better adapted to wet soils, I cannot yet determine.

"6. That the effects of gypsum as a manure are hardly perceptible in the vicinity of the sea."

The reason conjectured for the last fact is, that the atmosphere on the coast is charged with muriate of soda or common salt—that the sulphuric acid of the gypsum, having a stronger affinity for the soda than the muriatic acid, unites with it, and forms a sulphate of soda, which if not unfriendly to vegetation, does not seem to aid it. The Chancellor advances the opinion, since amply confirmed, that calcareous earths are permanent manures, in proportion to the quantity employed; "for if this is small," he adds, "it must be frequently renewed, because this earth is soluble in water, and will be carried off by it, or imbibed by the plants themselves." This latter fact has been conclusively shown by Mr. Ruffin, in his valuable treatise upon calcareous manures. In speaking of the decreasing fertility of soils, from the effects of culture, water, fire, &c. he adds, "Let us not, however, tremble for the fate of posterity; the fossils which the sea affords, the vast quarries of marble, chalk, gypsum, marl, which all derive their origin from the same source, not only restore the loss which the water occasions, but agreeable to this system, compel the air to deposite the spoils of the vegetable world, and the fires which have consumed the old, to animate new plants." We may add, that the Chancellor found the gypsum beneficial in proportion to the poverty and lightness of the soil; and that modern experience has demonstrated, that it is beneficial to the potato, pea and other leguminous crops.

A BLESSING IN THE FORM OF AN ENEMY.

Ezra L'Hommedieu, favorably known in our legislative annals, and a nice observer in agricultural matters, prefaces a communication on manures, by observing, that the land in his county, (Suffolk,) was so constantly tilled, and so little attention was paid to making manure, "that an average of not more than five or six bushels of wheat was raised on the acre. This mode of husbandry was still pursued, and although the land was gradually impoverished, the farmer found the crop, though small, more than would pay for his labor and expense. The wheat insect, the Hessian fly, *put an end to this kind of husbandry, and in that respect has proved a blessing instead of a curse:* No other way being found to prevent the injury to this crop by the insect, but by *highly manuring the land.* Great attention since has been paid to making manure, which in many parts of the county has increased TEN-FOLD. This addition has been made by green sea-weed; by drifted sea-weed; by making a compost with barn-yard dung and turf; by mud taken from the creeks and swamps; by leached ashes, and by the fish called manhaden or mosbankers."

This narration of Mr. L'Hommedieu affords important hints to a vast many farmers, who are careless of saving or applying manure—who are going on, and are likely to keep going on, in a reckless disregard of the first principles of good farming, till the Hessian fly, or some other malady, shall *drive* them to a better system. In some cases the manure was increased *ten-fold!* And so it may be increased upon more than half the farms in our state. It is vegetable and animal matters—it is dung, that feeds our crops, and makes our grain, and meat, and money. There is another fact to which we would call the attention of the advocates of *fermented* manures. Mr. L. speaks of a compost of yard dung and turf. Whence the utility of this mixture? Why cart turf first to the yard, and afterwards to the field? For the very plain reason, that while mixed with the dung in the compost, it became enriched by the gases—the volatile parts of the manure—given off in the process of fermentation, and which would otherwise have been scattered to the winds, and their fertilizing properties lost to the farm.

Mr. L. describes various experiments made with green and drift sea-weed, with the compost, and with mud and fish.

The green sea-weed is thrown into the hog-yards, with some dirt or turf, and being trodden and mixed by the hogs, is in a few weeks fit for use, and is applied alike to small grains, or to corn in the hill.

The drift sea-weed is spread in a dry state upon wheat grounds, directly after sowing, with good effect; it is also used as litter, or manufactured into dung by the pigs, in the pen. One man thus made 20 tons in a year, worth $20, with two hogs. Mr. L. suggests that a similar economy may be effected by persons living remote from the sea, by putting in the pen the fresh grass growing on flats and in rivers, and adding turf or dirt, and any vegetable not fit for fodder. The suggestion is a good one. Marsh lands and water may thus be made to give back the riches which are constantly flowing into them from the higher grounds.

The dung for the compost is carted from the yard *as soon as the winter foddering is over*, and mixed in alternate layers with the turf, the turf or dirt forming a thick covering to the pile, to keep the sun from the dung. Nothing is said of making compost with fermented dung.

The mud manure is the vegetable matter which is washed into streams, mixed with a portion of earth. It is exposed to a winter's frost, which pulverizes it. It is then usefully applied as a top-dressing to grass or wheat. Its value must depend upon the proportion of vegetable matter with which it abounds.

The fish, which are taken in great abundance, are used in dunging corn in the hills, are spread upon grass grounds, 15 inches apart, or made into a compost with earth, in the proportion of one load of fish to four of earth. Fifteen loads of the compost are found sufficient for an acre of poor land, which will in consequence give 30 bushels of wheat. Here we must state another fact, and a conclusive one, in confirmation of our theory, that the gases evolved by fermenting manure are a valuable food for plants. *Plants* can live upon air We will quote Mr. L.'s words:

"Mr. Glover relates a circumstance which is curious. He made a heap, composed of those fish and earth, in the manner above related, near a fence where a field of wheat was growing on the opposite side. The wheat near the heap soon changed its color, and grew luxuriant, and at harvest yielded nearly double the quantity to the other parts of the field. He is confident the wheat could derive no nourishment from the heap or compost, by its being washed by rains to the ground on the other side of the fence, where the wheat grew, and could be effected *only by the effluvia arising from the putrefaction of the fish, and absorbed by the leaves of the wheat.*" Vol. I. p. 67.

RAISING CLOVER SEED.

Suffolk county, we are informed by Mr. L'Hommedieu, sent to market, 47 years ago, more clover seed than all the rest of the state. It was not uncommon for a farmer to market 30 bushels in a year. The best soil for producing seed, says Mr. L. is a light sand or loam. The seed was collected both from the first and second crop, but the largest quantity was taken from the first. When intended for seed, only three or four pounds were sown upon the acre,—upon land yielding ten bushels of wheat or rye. This thin crop was not considered profitable to mow, but standing thin the heads were well filled with seed. When about one-half of the field had changed its color, by the drying of the clover heads, they then began to gather the seed, by means of an instrument drawn by a horse, and guided by a man or boy. This machine consisted of an open box, about four feet square at the bottom, and about two feet high on three sides. "One part," says Mr. L. "which we may call the fore part, is open; on this part is fixed fingers similar to the fingers of a cradle, about three feet long, and so near together as to break off the heads from the clover stocks, which are taken between these fingers. The heads are thrown back into the box as the horse walks on. The box is fixed on an axle-tree, supported by two small wheels of two feet in diameter; two handles are fixed to the box behind, by which the man or boy, at the same time he guides the horse, lowers or raises the fingers of the machine, so as to take off all the heads from the grass. As often as the box gets full of heads, they are thrown out, and the horse goes on again." With this machine, a boy and horse would gather the heads from five acres in a day. On rich lands no seed was taken from the first crop, it being too luxuriant to seed well. The heads were placed in small cocks in the field, and left there two or three weeks, in order that the husk might rot, and the seed be the easier extricated. This process is now superseded by the use of the modern clover mill. Mr. L. had known the produce to be as high as 4½ bushels the acre.

BLIGHT IN PEAR TREES.

"The Pennsylvania Horticultural Society, anxious to promote the discovery of a preventive for the disease usually termed *blight* in pear trees, offers a premium of FIVE HUNDRED DOLLARS, to be paid to the person who shall discover and make public an effectual means of preventing its attack. The premium not to be awarded until after the expiration of three years from the publication of the preventive, or until the society shall be fully satisfied of its efficacy. Communications on the subject may be addressed, per mail, to *David Landreith*, Cor. Sec'y, Philadelphia."

The first notice that we find on record of the blight in the pear tree, and which also extended to the apple and the quince, is in a letter from William Denning, Esq. written in 1793, and inserted in the first volume of the Transactions of the Society for the promotion of Agriculture, &c. p. 185. It was first observed by the writer in 1780, at his place in Dutchess, now Putnam. "I observed," says he, "the young, remote and tender shoots first affected; I traced the malady to the spot where the sap first ceased to flow, but could discover no external cause. On the second year, I found the boughs wounded deeper, and progressing yearly, the trees continued to sicken, and in six or seven years died." Mr. Denning supposed he had detected the cause of the blight in a worm or borer, which he found in the wood of the tree near the ground; and he bared the collar of some trees to the frosts of winter, with partial benefit as he supposed. The worm found at the root was probably the *saperda bivettata*, described by Say, in a previous volume of the Cultivator, in a letter to the conductor, and was not the cause of the blight.

The earliest personal knowledge we had of the blight was in 1802; and during that and the few subsequent years, it destroyed very many trees. The disease seemed then to disappear, with us, until about 1824–5, when it again appeared, and continued till 1831, since which we have not noticed it among our trees. We are inclined to believe that the blight has appeared periodically, at intervals of ten to fifteen years, and has continued four or five years at each return.

The first step towards discovering a preventive is to ascertain the cause. The popular notions that the blight is caused by lightning or the sun's rays, is too unphilosophical to be entertained for a moment. Like causes will always produce like effects; and as these alleged causes are continually operating, they cannot be the true ones. There is little doubt but the blight is caused by an insect, which injects a poison into the elaborated sap of the tender branches; and it is probable that the species is one which assumes its destructive form only at intervals of some years, like the locust. In 1831, we made a topical application to our trees of chloride of lime, in a diluted form, which we supposed might, by affecting the sap, render it obnoxious to the insect, or prove an antidote to its poison. The disappearance of the disease, at that period, prevented our determining on the efficiency of the application. Professor Harris has ascribed the blight to an insect called *scholitus pyri*.

Mr. GARBUTT'S PREMIUMS.

Mr. William Garbutt, a very intelligent, excellent and enterprising farmer, of Wheatland, Monroe, has instructed us to offer, in his name, the six following premiums. "I have long wished," says Mr. G. in his letter to us, "that cultivators would exhibit, through the medium of agricultural journals, their methods of farming, together with the amount of labor and the product of their farms. It would open an immense volume of useful knowledge, and give a powerful impulse to agricultural improvement. With the view of furthering so desirable an object, I will add two classes of premiums to your list, viz:

1. For the best managed grain and grass farm, grain being the staple, of not less than 100 acres,..... $10
2. For the second best,..... 7
3. For the third best,..... 5
4. For the best managed grass and stock farm, of not less than 150 acres,..... 10
5. For the second best,..... 7
6. For the third best,..... 5

As Mr. Garbutt's object is to elicit and disseminate useful information among his brother farmers, for the common good, the better to produce the desired result, he imposes upon competitors for the above premiums, the following conditions:—

1. That the competitor shall live upon and manage his farm, either as owner or occupant.

2. That the statement of management shall embrace a period of three years.

3. That such statement shall exhibit the character of the soil, the description of the crops and stock, the mode of management, estimated value of all the crops and stock, mode of managing manures, expense of labor, &c. In short it must exhibit a true account of the profits of the farm for the three years, in such detail as to enable others to profit by the examples of the successful competitors.

While upon this subject, we venture to suggest to land holders, and others who feel a deep interest in the substantial improvements of our country, whether they would not subserve their individual as well as the public interests, by following the patriotic example of our worthy friend Garbutt, in offering premiums for improvements in husbandry. These will do more to enhance the value of real estate, and to promote the common weal, than the multiplication of banks, or the mad schemes of speculation, which have raised thousands to imaginary opulence, but which, in reality, have reduced tens of thousands to absolute ruin. Productive industry, after all, is the true source of national wealth and greatness; and the more we enlighten and honor labor, the more we shall have of it, and the better it will be for us.

BREEDS OF SHEEP.

The breeds of sheep in the United States may be comprised under the three following heads, viz:

1. *Short and fine wooled*, which embrace the Merino family, including the Saxons, which are reared principally for their fleece, a necessary and exclusive material in all our fine cloths. The average weight of fleece may be stated at 2½ lbs. and the length of the staple 2½ inches.

2. *Middle wooled.*—This class may be considered as embracing our common sheep, and the South Downs of Great Britain. These are raised both for fleece and carcass, the quality of the mutton being generally considered better than that of either the short or long wooled kinds, and the fleece heavier, though coarser, than that of the former. The average length of the wool is stated at 3½ inches, and weight of fleece at 3½ and 4 lbs. The fleece of this class is employed in the fabrication of common and coarse cloths, flannels, &c. Most of the flocks in Britain come under this denomination,—the wool used for their fine cloths being almost exclusively the product of Spain and Germany.

3. *Long wooled*, which embrace the Leicester, Cotswold and Lincoln breeds. These afford the material for worsted goods, hosiery, &c. and although these sheep give a heavy fleece, often reaching to nine and twelve pounds, they are principally reared for the sake of their carcass—for their great weight and early maturity for the butcher.

As this latter class are of but recent introduction, and as their fleece is likely to come in demand as manufactories of worsted goods are multiplied among us, a few remarks in relation to each of the long wooled kinds above named, may not be uninteresting.

The *New Leicester* breed are an improvement, made by the celebrated Bakewell, after long and persevering efforts, and perpetuated by his disciples, by breeding only from select individuals. "Mr. Bakewell perceived, that smaller animals increased in weight more rapidly than those of very large size; and that they consumed so much less food, that the same quantity of herbage appplied to feeding a larger number of small sheep would produce more meat, than when applied to feeding a smaller number of large sheep which alone it would support. Acting upon these observations he selected from the different flocks in his neighborhood, without regard to size, the sheep which appeared to him to have the greatest propensity to fatten, and whose shape possessed the peculiarities which he considered would produce the largest proportion of valuable meat, and the smallest quantity of bone and offal. In doing this, it is probable he was led to prefer the smaller sheep, still more than he had been by the consideration above stated, because it is found that perfection of shape more frequently accompanies a moderate sized animal than a very large one." This quotation furnishes a valuable hint to American breeders, who are too prone to graduate value in proportion to size. Mr. Bakewell studied to improve the value of the carcass, deeming the fleece a secondary consideration. His improvements became so manifest and popular, that he was able to let his rams at two and three hundred guineas a season, and in one instance he let a single sheep for a thousand guineas the season. In 1793, Mr. Paget, an associate of Bakewell, sold at auction, a flock of 130 new Leicester ewes for £3,200, (= to $14,108,) averaging £25 16s. 11d. each, or about $108.

"No other sort of sheep, (says the Farmers' Series, from which we draw the preceding facts,) possesses so great a propensity to fatten—no other sort of sheep is fit for the butcher at so early an age—and although they are not calculated for the poorest soils, no other sort of sheep, in soils of a moderate or superior quality, is so profitable to the breeder." The weight of these sheep, at a year and a half old, is stated at from 24 to 36 lbs. per quarter. The staple of

the wool may average seven inches,—the weight of the fleece is seven to twelve pounds, and sometimes more.

The late Christopher Dunn, of this city, was among the first to introduce among us the New Leicester or Bakewell sheep, and they yet maintain their purity and value upon the farm of his son. Numerous importations have been since made, and the New Leicesters are now found in almost every section of our country. Their mutton is exhibited every spring in our market, and surpasses all others for fatness.

The *Cotswold* breed has recently been sensibly improved by mixing with the new Leicester—the carcass is less, but better formed, and the weight of fleece is somewhat diminished. The quarters of the improved Cotswold weigh from 20 to 40 pounds, and the fleece 7 to 8 pounds. We have not heard of but few of these sheep reaching our country.

The *Lincolnshire*, like the Cotswold, have undergone recent improvements by a cross with the new Leicesters. These sheep are particularly adapted to fenny or marshy lands, where they attain a heavier carcass and fleece than they do on uplands. Their average fleece is 8 or 9 lbs. and the staple is from 9 to 12 inches in length. Two of these killed at Lincoln market in 1827, gave fleeces that weighed 12 lbs. each; each of the fore quarters weighed 73 pounds, and the hind quarters 57½ pounds. An importation of Lincolns was noticed in a late Cultivator, by Mr. Clift, of Carmel, Putnam county.

Besides the sorts we have noticed, there are various crosses among us, of the Saxon, Merino and Leicesters with our common flocks.

We think, that however the preference may be given, near our large market towns, to mutton sheep, the fleece is likely to become the great object with the sheep farmer in the remote inland districts, because this marketable product will better bear the expense of long transportation than the carcass, and is likely to command a more regular price. The relative value of the different kinds must be a matter of calculation with the farmer. The weight of fleece ordinarily diminishes as it improves in fineness, while the latter is the general criterion of value.

A microscope has recently been constructed by Powell, of London, of such extraordinary power, as to show the serratures in the fibres of wool, which are found to increase in number much in the proportion to fineness. The writer on sheep husbandry, in the Farmers' Series of Useful Knowledge, thus describes the appearance of wool under this new microscopic power.

"The fibre thus looked at assumed a flattened riband-like form. It was of a pearly grey colour, darker towards the centre and with faint lines across it. The edges were evidently hooked, or more properly serrated—they resembled the teeth of a fine saw. These were somewhat irregular in the different parts of the field of view, both as to size and number. The area of the field was now ascertained; it was one-fortieth of an inch in diameter. By means of the micrometer we divided this into four, and we then counted the number of serrations in each division. Three of us counted all four divisions. The number was set down privately, and it was found that we had all estimated it at fifteen in each division, making 2,400 serratures in the space of an inch, all of which projected in the same direction, viz. from the root to the point. Then we endeavored to ascertain its actual diameter, and proved it to be 1-750 of an inch." The fibre was from a Merino fleece.

"We next endeavored to explore the cause of this serrated appearance, and the nature of the irregularities on the surface, which might possibly account for these tooth-like projections; we therefore took another fibre, and mounted it as an opaque object. It presented a beautiful glittering column, with lines of division across it, in number and distance seemingly corresponding with the serrations. These examinations afforded a satisfactory solution of the felting principle. The fibres can move readily in a direction from root to point, the projections of the cups [or serratures] offering little or no impediment, but when they have been once involved in a mass, and a mass that has been pressed powerfully togther, as in some part of the manufactory of all felting wool, the retraction of the fibre must be difficult, and in most cases impossible."

With the above instrument, an examination was instituted, of the relative fineness and felting properties of the wool of different kinds of sheep, the felting properties being indicated by the number of its serratures. The following are some of the results:

	Fibres to an inch.	Serratures to do.
Saxon,	840	2,720
Merino pick-lock,	750	2,560
Common Merino,	750	2,400
South Down,	660	2,086
Leicester,	500	1,860
Lincoln,	480	1,280
Wool of the rabbit,	1,000	2,880
do. of the seal,	1,250	480

There can be no doubt, continues our author, that wool consists of a central stem or stock, probably hollow, or at least porous, and possessing a semi-transparency not found in the fibre of hair. From this central stalk there springs, at different distances, in different breeds of sheep, a circlet of leave-shaped projections, resembling leaves, or scales, which give to the wool the power of felting, and regulate the degree in which that power is possessed.

We annex cuts below, showing the appearance of the fibres of wool, when subjected to this new microscopic power, both in its transparent and opaque forms.

Fig. 8.

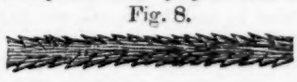


Fig. 10.

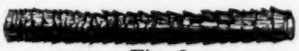
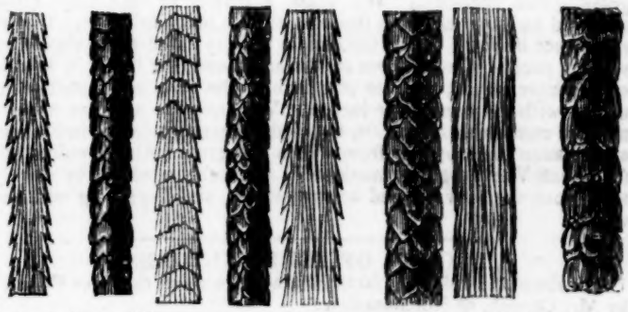


Fig. 9.

Fig. 11.

12 13 14 15 16 17 18 19



8. A fibre of Saxon wool as a transparent object. 9. do. opaque.
10. do. of picklock Merino. 11. do. opaque.
12. do. of common Merino. 13. do. opaque.
14. do. of South Down. 15. do. opaque.
16. do. of Leicester. 17. do. opaque.
18. do. of Lincoln. 19. do. opaque.

EXPERIMENTS IN RAISING LUCERN.

We find in the Transactions of the Society for the Promotion of Agriculture, &c. two communications from Chancellor Livingston, giving the details and results of fourteen experiments made in the culture of lucern, upon various soils, and in connexion with various crops. The results were various. In some cases the produce was estimated as high as six tons four cwt. the acre, in cured forage; and five crops were taken in a season, two to feed green, and three as hay. In other cases, upon stiff or wet soils, or with grain that lodged, the results were unfavorable. These experiments enabled that intelligent gentleman to lay down some definite rules for our guidance in the culture of this valuable crop, and among them the following:

"1. Never to sow on ground that is not perfectly pulverized.

"2. Not to sow till the earth has acquired a degree of warmth friendly to rapid vegetation, that is, not earlier than the month of May.

"3. To sow with no crop that will probably lodge.

"4. If sown with buckwheat, to apply no gypsum or other manure till the buckwheat is off."

The first course of experiments was made in 1793. The Chancellor closes this communication with expressing his opinion, that lucern is better adapted to our climate than clover; that it exacts no more labor; that it leaves the soil much better than it found it; and that it is perennial in its duration—having remarked two plants in a common pasture which had defied the bite of cattle for upwards of twenty years.

The second communication details his in experiments 1794, and closes with further suggestions as to the habitats and best mode of cultivating the lucern, viz:

"That it appears to be full as hardy as clover, but, like it, to delight in a warm, dry soil, though it will flourish in a moist clay—subject, however, to the same casualties in open winters, when both will be thrown out by the frost.

That "when very young, it requires a natural or artificial warmth in the soil, otherwise it languishes, and when the weeds and natural grasses come up it is unable to contend with them. That it should be sown in a warm dry soil, in tolerable heart;" that he should prefer for it, ground that had been manured and bore a potato crop the preceding year. That the seed may be sown the first of July. That if the crop becomes yellow, it should be immediately mown, and that it will come forth again free from disorder. That the time for cutting for souling, is whenever it will fill the scythe—should be cut the first year, to destroy weeds. That it may be fed down by any kind of cattle with as much safety as clover, &c. He urges upon young farmers, not to be discouraged in its culture by older ones, who tell him they have tried it, and that *it will not do;* but to persevere, and they *will* succeed in rendering it profitable.

We have had considerable experience in raising lucern during the last sixteen years. Until recently we have found it a valuable crop;—having been enabled to feed six or seven cattle upon an acre of it during the summer months. For two or three of the last years our efforts to cultivate it have been less successful, on account of the severity of our winters, which has destroyed many of the plants, and of the vexatious intrusion of other grasses, particularly of the spear-grass, (*Poa pretensis.*) We think a potato or ruta baga crop, manured and kept clean, is the best crop to precede lucern; that it should not be sown before the middle of May; that there should be sixteen pounds of seed sown to the acre, and that if put in broadcast, winter rye, at the rate of a peck to the acre, is the best grain to sow with the seed of the lucern. We design to make an experiment in cultivating it in drills, the mode generally adopted in France, and to keep the crop free from weeds and grass with the cultivator, for which Van Bergen's machine is admirably adapted, by merely taking out the forward and central share, and dispensing with the wheel.

PROFITS OF BEET CULTURE.

We draw the following facts from a "Notice on the Beet Sugar," by Mr. Church, of Northampton:

That from eighteen to twenty tons of beets may be ordinarily grown upon the acre; and that twenty tons, on the supposition, and a reasonable one, that the roots yield eight per cent of sugar, will give 3,200 pounds sugar, and hence, that a given piece of land will yield more than twice the weight of sugar that it will of wheat.

That sugar, of ordinary quality, may be furnished by the manufacturer, at four or five cents per pound.

That the consumption of sugar in France, before it was produced there from the beet root, averaged *one* pound per head per annum, and now averages *three* pounds per head; that the consumption in Great Britain amounts to *sixteen* pounds per head; and in Cuba to *one hundred and twenty* pounds per head, per annum.

We see from these facts that the beet may be made more profitable than the wheat culture;—for, if the roots are sold to the manufacturer, at eighteen cents per cwt. twenty tons, the assumed product of an acre, would bring $86. We also learn, that when the culture and manufacture are well established among us, indigenous sugar may be brought within the means of the most indigent, and sold cheaper than flour is sold at the present day. Sugar is more nutritious than flour, and, when extensively used, will abridge very much the consumption of solid food, and be withal more healthy.

FACTS WORTHY OF CONSIDERATION.

Five millions of agriculturists in Great Britain furnish subsistence for her population of sixteen to eighteen millions of people. Great Britain imports but a small amount of provisions.

Twelve millions of agriculturists in the United States *do not* furnish subsistence for a population of sixteen millions. We import bread stuffs, now, from almost every country of Europe.

Whence this mighty difference? It is not owing to the natural inferiority of our soil, nor to the inferiority of our laborers in physical strength and industry. In both these we claim to have the advantage of the old continent;—but it is owing to the neglect of our legislators and statesmen, to patronize and aid this great primary branch of labor—it is for want of that aid which government and science give there, and which they do not give here. *There* we see established schools of agriculture, boards of agriculture. *Here* we see neither. *There* agricultural science constitutes a branch of instruction in the primary schools, and practical instruction is dispensed in those of higher grades. *Here* our schools do not afford instruction in either the science or practice. *There* large sums are disbursed from the public treasury, to make agricultural surveys, to publish standard works on husbandry, and to call forth genius and skill, by liberal rewards and distinctions. *Here* government expends nothing for these objects. *There* agricultural improvement is promoted from state policy. *Here* it is neglected—because it has no *quid pro quo*—nothing to offer to gratify the short-sighted cupidity of party. Our statesmen are so greedy for the sixpence that is close to their eye, that they do not see the dollar which beckons them from the distance. The landed proprietors of Europe generally possess intelligence and influence, which they effectually exert, in combined effort, to increase the products of their estates. *Here* the proprietors are too often uninformed and spiritless, having no concert, and tamely submitting to the miserable pittance which their public servants may find leisure or inclination to dole out to them.

THIRTY YEARS AGO,

What was the state of our manufactures and mechanic arts compared to what they are at the present day? What art has remained stationary? Manupilation has given way to machinery—science has shed her effulgent light upon processes which were before obscure, tedious and uncertain—and inventive genius, roused from its torpor by the spirit of improvement, has been actively at work, in perfecting the mechanic arts. Where is the man who, in any of these arts, follows, in his business, the practice of his father, that is successful in his calling? All is changed—all is improved. And how fares it with agriculture? This primitive art, too, has felt the impulse of improvement, though yet in a partial degree. Some portions of her labors have been blessed with an abundant increase, while other portions, practising on the model of "our fathers," remain at a fearful distance behind the age. In most parts of northern Europe improvement has progressed, and is progressing. English husbandry has been greatly improved, and Scotch husbandry still more so. France is in the progress of rapid improvement in her agriculture; and the agricultural schools of Fellenbergh and Von Thaer are fast diffusing a knowledge of the science and of the best practices of husbandry over the wide-spread German empire. With us, while some districts, and many individuals, have made creditable advances in agricultural improvement, the mass of our farmers, we regret to say, are just where they were *thirty years ago*, apparently unconscious, that while they have remained stationary, the world about them has been continually advancing in intelligence and improvement. Much has been done, and more remains to be done, to improve our farming; the spirit of inquiry and investigation is abroad; much useful information is being diffused in our agricultural journals, which are increasing in interest, in numbers and in circulation; and it is hoped that our legislators will ere long find leisure to turn their attention to this great interest, and assist to elevate it to the rank to which it belongs, as well in a political as in a pecuniary point of view. For agriculture, in reality, constitutes the foundation upon which the fabric of our social, moral and political institutions are based, and upon which they must ever depend for support and prosperity.

School Libraries.—Massachusetts has passed a resolve, by a unanimous vote in the lower house, that each school district in the state, shall raise thirty dollars the first year, and ten dollars annually thereafter, to establish common school libraries. Massachusetts seems determined that her school districts, like her sons, shall *learn to take care of themselves*, and that her laboring, wealth producing classes, shall be *well* instructed. She has the best schools, though she had no common school fund till 1834.

Topping Corn.—N. Weld has given us, in the Silk Culturist, a notable illustration of the loss farmers suffer in topping their corn. From accurate experiments he ascertained, that his crop was diminished one-fifth when he topped the stalks at the usual time; or that the yield of grain on the topped corn was as 100, to 133⅓ on the untopped corn. We still lack experiments to show the loss, if any, which results from cutting up the corn, at the usual time of topping.

OPINIONS OF OUR NEIGHBORS.

We extract the following from the Massachusetts Agricultural Repository and Journal. It conveys a merited censure upon the indifference of our legislators to the great interest which feeds and enriches our state. It is embraced in a review of the third and last volume of the Memoirs of the Board of Agriculture of the state of New-York. We will only remark, what most of our readers already know, that Massachusetts still keeps up her liberal appropriations for the support of her agricultural societies, and that she is now providing for an *agricultural* survey of the state.

"The volume in question," says the review, "is, both in matter and execution, superior to most of the publications which have appeared in our country, on the subject of agriculture, and we feel deep regret in learning, that this volume will close the labors of the Board of Agriculture in that state. From what adverse or unpropitious causes, whether from prejudice, or false economy, the state of New-York should have withdrawn its patronage, at a moment when, from the volume before us, a most intelligent and enlightened spirit had been excited, it would be difficult for us to divine, and improper in us to discuss.

"*If any state in the union was under deep obligations to take the lead in encouraging a more intelligent and scientific mode of agriculture, New-York was certainly that state. Its means are not only much greater, but its influence and example were of the greatest weight.*"

Vitality of seeds.—Prof. Henshaw, lately made experiments with seeds of an acacia, to determine how far their vitality was impaired by heat. He put some of these seeds into boiling water; others he actually boiled 1¼, 3, 6 and 15 minutes; he planted them afterwards in the earth, and they all germinated and grew, in half the time that seeds did which had not been steeped or boiled. On opening an ancient British tumulus, some small seeds were found in the stomach of a human skeleton, which must have been eaten and lain there two thousand years. Some of these were planted in the horticultural garden, by Prof. Lindley, germinated and have produced fruit. They prove to be the common raspberry.

Cotton seed oil.—Prof. Olmsted estimates that the value of the surplus cotton seed of the United States, if converted into oil, cannot be less than ten millions of dollars. He also estimates that it is capable of producing 9,668 millions of cubic feet of gas, more than enough to supply 24 such cities as London, and equivalent, for this purpose, to 792,000 chaldrons of coal. These discoveries are among the fruits of science, applied to the arts, and to human comfort. The cotton seed oil constitutes an excellent lamp oil, and serves well for painting. The oil cake is a capital feed for farm stock. The seed of the cotton has heretofore been considered of little value, except for manure.

To prevent abortion in fruit trees.—A respectable gentleman assures us, that he has strewn plaster upon his fruit trees, for successive years, when in bloom, as a means of inducing fecundity, with unvarying success. The discovery was the result of accident. A tree which had flowered freely, but fruited shyly, had by accident got a dusting of gypsum while in flower, and it was loaded with fruit. The male and female organs, in most fruits, are in the same flower; and it is well known, that if heavy rains or strong winds occur when trees are in bloom, they seriously diminish the fruit, and often destroy it. The reason of this is, that the pollen, which should fecundate the female organ, is prematurely blown away or destroyed, before it has performed its office. The gypsum *may* prevent this.

Harrowing Grain in Spring, is *now* particularly recommended, where the grain is not too far advanced, in order to counteract the effects of the recent changeable, or freezing and thawing weather. To the proofs already given of the efficacy of this practice, we add the testimony of William Merrifield, a respectable farmer of Guilderland, who has followed it for six years. He says it has resuscitated crops that promised nothing before harrowing, and rendered them highly productive; and that where a part of a field, and that the poorest, has been harrowed, the product was, in one case, fivefold that of the unharrowed part.

Agricultural Education in France.—The king of France has issued an ordonnance upon the report of the minister of commerce, directing the establishment of a royal conservatory of arts and trades, and a system of public and gratuitous instruction for agriculture. The instruction will be in three courses: 1st. on cultivation; 2d. agricultural construction and mechanics; 3d. agricultural chemistry.

CORRESPONDENCE—CONDENSED.

AMBLER'S MOWING MACHINE.

We have received a commuication from Mr. M. K. Beale, one of the proprietors, we believe, giving information in regard to this machine. Although, contrary to rule, we are subjected to postage, we will give the substance of the communication, for the benefit of the proprietor, and the information of the public.

In answer to queries supposed to be put, it is stated,—

1. That the power required to use the machine is that of two horses, probably from 700 to 900 pounds.
2. That it will cut fifteen to twenty acres of grass per day, and may be used to cut lodged grain to advantage.
3. That it requires but one person to tend it.
4. That it can be readily packed or boxed for transportation.
5. That it weighs about 500 pounds.
6. That it is not more liable to get out of order than common horse powers.
7. That it cuts and leaves the grass erect on the ground where it grew.
8. That it will operate better on stony or uneven ground, than the revolving hay rake.
9. That it cuts lodged grass finely. And,
10. That the cost is $130.

Beale and Griswold are the proprietors of the patent for all the country east of the Hudson, and machines, or rights, may be obtained by applying to the writer, M. K. Beale, Spencertown, Columbia county, New-York.

MEADOW AND PASTURE GRASSES.

Kingsbury, March 24, 1837.

DEAR SIR,—Information is wanted with regard to the most suitable grasses to be sown on such a quality of soil, [flat, some of it wet, clay, with an occasional admixture of loam and peaty mould,] both for meadow and pasture. I had selected the most nutritive kinds from the table of grasses in your third volume, with the view of inquiring their fitness for my purpose, and where the seeds may be obtained, viz. tall fescue, spiked fescue, hard fescue, lucern, meadow fox-tail and sweet vernal grass. I wish also to inquire whether skinless oats prove profitable in this climate, where seed can be obtained, and at what price. JER. FINCH.

REMARKS.—We do not know that seeds of any of the fescue grasses named are for sale in our seed stores. The lucern may be had of Thorburn, in this city, and the seed of the meadow fox-tail and sweet scented vernal grass in New-York. The lucern will not answer on Mr. Finch's soil; it requires a dry bottom and light soil. The meadow fox-tail and sweet scented grass, are sown for their early feed, which, though nutritive, is small in quantity. They give but little to the scythe. We should recommend the timothy, herdsgrass, and clover, for hay, with an admixture of orchard or tall meadow oat grass for pasture. Although it does not suit to cut the clover and timothy together, for hay, the former is but a biennial, and will leave the ground principally to the first two kinds after the first mowing. The grass seeds we recommend are all for sale at Thorburn's, who has also the skinless oats, which he sells at

The public confidence in this grain has been rather shaken by the results of the last crop.

☞ Mr. Alexander Smith, seedsman, and our agent in Broadway, New-York, offers to import, to order, any kind of foreign grass seeds that may be desired.

Troy Grove, Ill. Feb. 23.

Your papers are well liked in this settlement, and I have no doubt but hundreds in Illinois would subscribe, if they were acquainted with it. I wish for information on the subject of hedges, and in planting and raising timber. [*See last volume.*] Our prairies are so large, that the cold winds which sweep across them kill young trees that are set out, but they will grow in the groves, or on the east or south sides of them, where the winds are less severe. It is frequently 20 miles across the prairies, and nearly level, and unless we can raise timber and live fences, our grand children will be in a bad fix. If you have any knowledge of the white mulberry, or any other kind of mulberry, making fence that will keep out cattle and hogs, you would confer a favor by publishing it. Mulberry, ches-

nut and locust grow well for one or two years, and then get killed by the frost. L. KELSEY, JR.

REMARK.—The only mode of succeeding in a plantation, under the difficulties above enumerated, seems to be, to begin on the west and north sides with some of the most hardy timber trees, as beech, birch, &c. and when so far advanced as to serve as shelter, to plant the more tender kinds on the leeward sides. This mode has succeeded in south east Russia and in Scotland, and thus lands before waste, have been rendered fertile and productive. The beech is extensively used in Flanders for hedges. Are there no native thorns (*craetagus*) in Illinois—is not the honey locust indigenous there? These are suitable for fences. The only mulberry that will be likely to withstand the prairie winds, we think, is the red or native American.

Canada thistles may be exterminated, by being cut three times in a season, *i. e.* in June, July and August, just below the surface of the ground. I have ascertained this from practical experience.

IRA ORMSBY.

Mr. O. asks us, if ruta baga will do well, for several years on the same ground, providing it is well manured? We answer, it will *do better* on different pieces, provided the soil is dry, light and well manured. There is no crop, not even garden products, that does well, if repeated in consecutive seasons, upon the same field.

CURE FOR THE HOVEN.

Mr. JOHN DANIELS, of North Hartland, Vt. sends us the following directions for saving cattle that are choked, or hoven, by eating to excess clover or other green food. It is worth trying, and we have little doubt will be found effectual. What particularly recommends it is, that it is not likely to do harm, while the remedy is within the reach of every farmer.

"To one pint of old sharp vinegar, add one half pound of hog's lard, incorporate them together over a fire; add enough more vinegar to reduce the heat, so that it will not burn; put into a bottle and turn down the animal's neck. The above is a dose for an ox."

Cure for Hoven in Cattle.—Give to the animals rye straw, which it is said they will eat greedily.—*Com. by W. Keese, Essex co.*

Cure for the Horn-ail.—Take of good vinegar and spirits of turpentine one gill each, of salt and pepper, red or black, half a gill each, simmer these together, and apply them as warm as your hand will bear between the horns, winding a cloth round the horns near the head, in order to retain as much of the compound as may be. One application is sufficient in ordinary cases; but where the case is obstinate, a repetition may be necessary. I have tried this often, and have never failed of performing a cure, and think it far preferable to perforating the horn, as is the practice with many.

IRA GRANT.

SHORT HORN CATTLE.

We are requested to advertise three short horn bulls and two calves, of approved pedigree; but as it does not comport with our custom to publish advertisements in this sheet, we barely state, that the cattle may be seen at the farm of A. Ferguson, Esq. three miles from Burlington Beach, Upper Canada, and that for terms, &c. address Mr. Ferguson, Nelson post-office, U. C.

NOTICES TO CORRESPONDENTS.

ANGLE-WORMS.—The inquiry is made by two subscribers in Appling, Jefferson, "how they can destroy angle-worms in their garden?" We were not aware that these worms preyed on any sort of vegetation, or that they were in any way injurious; indeed we supposed they served a beneficial purpose: for Curtis, who has given us an excellent treatise upon grasses, remarks, that these worms, by "throwing up great quantities of earth, contribute greatly, in meadow lands, to prevent the growth of moss, as well as afford fresh soil for the roots of plants to shoot into, and for seeds to vegetate in." He calls them "the natural diggers and dungers of land; worm casts being nothing more than the dung of worms."—But if our subscribers are determined to exterminate these "diggers and dungers," they can do it, it is believed, in the way that other ground worms are destroyed, that is, by sprinkling the ground sufficiently with soot, or salt, or brine; and probably lime or ashes may suffice—and a strong decoction of walnut leaves is said to be certain. We do not say this from experience, but on respectable authority.

ARTESIAN WELLS.—We have had several inquiries as to the expense of boring for water, of the augurs and implements, and where the latter can be purchased. The implements, we understand, may be had in this city. The expense of boring will very much depend upon the depth to which it is carried, and the material which is to be perforated—the expense increasing the lower the augur is carried. The boring is continued to the depth, sometimes, of 500 to 1000 feet. We have had no practical experience in the matter; but we find the process thus described:—The soil is to be perforated with an iron borer; a wooden or metal pipe is then to be placed in the hole, and driven down; after which the boring is continued, and as it progresses the pipe is driven further down. As the augur becomes filled with earth or pulverized rock, it is drawn up and emptied; so that, by the additions of fresh portions of the pipe, the boring may be carried to a great extent under ground, and water is obtained, which generally rises to near the surface, and often flows over the top of the pipe in a continued stream.

J. M'D. Matthews will find answers to his queries in the communication of Mr. Petrie, &c. except in relation to the corn crusher, as to which we can advise him no further than to say, that Taunton, to which he alludes, is in Massachusetts.

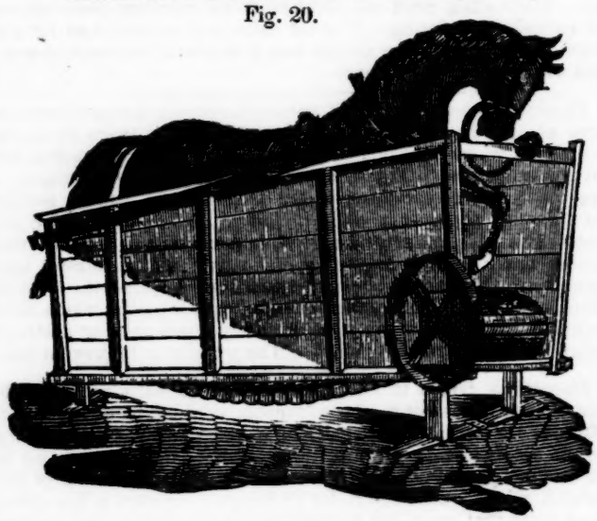
The "Good Samaritan," of Hartford, Ct. will accept our thanks for the "Winter Belmont apples," grown in Ohio, and the grafts of the same, which he sent us. The fruit is beautful to the eye; but, as we are bound to be ingenuous in these matters, we must say, to the taste it is below mediocrity—perhaps owing to the defective state in which it came to us.

Mr. E. Thompson, of Stanford, Dutchess, asks where he can procure the potato oats? Will some gentleman, who has them to spare, favor us with his address, and note to us the price?

A. C. Howard, of Thetford, Vt. is anxious to know if certain strata of earths which he describes, afford indications of marl? We are not qualfied to answer his question; but he can readily determine if he has marl, by drying some of the earth supposed to contain carbonate of lime, and testing it with muriatic acid, or strong vinegar, either of which will show its presence, if effervescence takes place on the acid being turned upon the earth. "I have made use of plaster of Paris," adds Mr. H. "and leached ashes, for a number of years, and find they have a good effect on corn, and potatoes and clover. I have practised upon the alternating system, till I have increased the products four-fold upon some of my poorest land, with the aid of plaster and a small quantity of animal manure." A good result, and a worthy example.

GLEASON'S PORTABLE HORSE POWER,

Fig. 20.



Of which we here present a drawing, may be had by applying to W. Thorburn, seedsman, in this city—price $135. It appears, from a cursory examination, to be well constructed, not liable to get out of order, and possesses the advantage, as the proprietors allege, of driving more machinery, with less animal strength, and with fewer hands, than any machine of the kind now in use. Of this latter fact we do not feel competent to judge. The power we saw in operation was adapted to one horse, and might be applied to

thrashing, sawing, or to any other stationary purpose upon the farm, or in the shop of the mechanic. The patent right for this and several adjoining counties, belongs to Messrs. Hanna and Jaggers, Valatie, Columbia county.

☞We are under the necessity of postponing or omitting many favors of our correspondents, for want of room to insert them. We contemplate such arrangements as will enable us to give a greater quantity of matter hereafter.

CORRESPONDENCE.

MR. BALL'S REMARKS.

Remarks of L. Chandler Ball, of Rensselaer, made in the Agricultural Convention, on the resolution of L. F. Allen, that the legislature be requested to aid in the agricultural improvement of the state.

I beg leave, Mr. President, to make a few remarks in support of the resolution offered by the gentleman from Erie, in the earnest hope that the united appeal of this convention in behalf of the farmers of this state, may reach the ears and the hearts of our legislators, and cause them to award to us the long delayed justice we demand. The importance of an agricultural school, and the establishment of societies for the diffusion of agricultural knowledge, where the sons of farmers, destined to fill their places, may obtain a thorough scientific and practical knowledge of their profession, is too obvious to need either argument or example to convince them of the fact. That it may be a question of policy, with those who hold the reins of government, and are basking in the sunshine of popular favor, I will not deny—it would undoubtedly thwart some of their plans of personal aggrandizement, and dissipate some of their ambitious schemes, were the farmer to receive equal advantages with themselves, and be made that high intellectual and reflecting being, which God designed him. Educate the farmer, and he is no longer the tool of power, the cat's paw of artful speculators or intriguing politicians. His faculties of body and mind are innocently and profitably employed in improving the soil, beautifying his home, rightly educating his children, enlarging his own mental powers, and increasing the amount of individual happiness, and national wealth and prosperity. Keep him in ignorance, and he barely rises either, in intellect or enjoyment, above the brute creation; his life is one of toil and misery, uncheered by a ray of hope, or the prospect of a brighter day, and even his physical energies are wasted and destroyed in a vain attempt to change the laws of nature.

There is an old saying, which, though often quoted, has lost none of its emphatic meaning, or peculiar adaptation to the farming community, that knowledge is power. And if we look abroad upon the world, we shall see individuals, communities, states and empires, all acting upon this principle, vieing with each other in the depth of scientific research, and the application of their discoveries to the wants, the comforts, and the business of life. This may most truly be called the era of learning and scientific improvement. The age of chivalry, of pastoral indolence and fairy legend, has gone by. The pomp and glory of the crusaders, the renown of the victor at the olympic games, or gladiatorial combat, the deafening shouts, that welcome war's conquering hero home, and gave him a niche in the temple of the gods, these with the tilt and tournament, and gay song of the troubadour, have all passed away with the times that gave them birth; and mind, mighty and immortal mind, has become the only source of power, and the only standard of greatness. In this free and happy land, it is impossible to chain the intellect, and degrade the farmer to the standard of the feudal serf, or Russian peasant. The commanding place we occupy among the family of nations, the freedom of the press and the institutions under which we live, all conspire to elevate the people, and render this Western Republic, the chosen land of genius and of enterprise. Here the mind, subjected to no government censorship, fettered by no decree of oriental despotism, triumphs in the exercise of its nobler powers, and like the fledged eagle as he soars aloft in conscious strength and beauty, it ranges on with untiring wing, till the whole arcana of science, the wonders of creation, and the hidden mysteries of nature, are all unfolded to its enraptured gaze. But 'tis not only in the development of the abstruse sciences, that the operation of mind is seen and felt, its influence pervades every calling and pursuit in life—the bare necessaries, as well as the comforts, conveniences, and luxuries we enjoy, all flow from this pierian fountain; and it is a fact, now obvious to the meanest capacity, that in this enlightened age, success cannot be obtained in any undertaking, unless the powers of the intellect are brought to co-operate with, and diminish the labor of the hands. For instance, can the manufacturer succeed, who neglects to avail himself of the inventions and improvements which science has made in machinery, in the production of the power loom, the spinning jenny, and the steam engine? Can the artisan and mechanist gain patronage and distinction, who jog on in the path their fathers' trod, giving no thought to the advancement of intelligence among the people, and learning nothing but the principles of striking the anvil, or shoving the plane? And can the farmer, whose scientific research is bounded by his almanac and the moon, who only learns the use of such ill-adapted implements of husbandry as he may chance to inherit, along with some half tilled "paternal acres," compete with him who understands the laws of nature, the character of the soil he cultivates, the growth of plants, the importance of labor-saving machines, in short, with him who makes mind an active agent in all his operations? The condition and enjoyments of the former I will not attempt to describe. Where you have the original, a picture is unnecessary; but the efforts of the latter are crowned with a rich reward. His fields show a luxuriant vegetation, and his store house an abundant harvest; his premises wear an aspect of neatness and elegance, and his home is the abode of happiness and love. 'Tis thus, Mr. President, with all the varied occupations in which man can engage. Mind grapples mind with stern and unyielding perseverance, and he alone is victor in life's pursuits, its contests and its hopes, who brings the greatest amount of talent, and the loftiest intellect, to his aid.

While we see every other class of community impressed with the importance of these facts, and eager in the pursuit of knowledge, how is it possible that the farmers of this state can sit quietly down, without one aspiring wish, without a single ambitious hope, and content themselves with the ignoble task of ascertaining how many of the comforts of life they can deprive themselves of, and live? Why, sir, the farmers are, in truth, the bone and muscle of the country, the supporters of government, the means of wealth, and the source of power and authority. With the proper knowledge, and with concert of thought and action, nothing within the bounds of reason and honor is beyond their attainment. Who can be so happy and so truly great, as an enlightened husbandman? For him are the gorgeous livery of the earth, the sublime grandeur of the heavens, the harmony of nature, the music of the spheres! Neatness and order reign throughout his own little domain, and joy and happiness are dispensed to all who come within its borders. In the family circle, and around the hallowed fireside, meet congenial spirits, hearts void of guile and free from care, to receive new pleasures, and to strengthen by interchange of thought and acts of kindness, the ties of friendship and the bonds of love. Secure in the enjoyment of these domestic pleasures, he heeds not the whirlwind of men's passions, the gaudy tinsel of the great, the rise and fall of parties, or the wreck of nations—and rightly appreciating his advantages and means of happiness, would not exchange his humble cottage and contented mind for a kingly palace, or a conqueror's diadem.

Yet there are some, I am ashamed to say, who are willing to sell their proud privileges for a mess of pottage. But 'tis ignorance, that curse of individuals, and despoiler of nations, that rests like a mighty incubus upon the people, and holds in subjection their giant energies. Let then the farmer receive the countenance and support of government; let him be educated, and receive his share of the benefits that are flowing from the light of science and the diffusion of knowledge. I contend, sir, that there is not an occupation or a profession followed, which requires so much actual knowledge, so much scholastic learning, as the science of agriculture. I know it has been thought to be quite unnecessary for a farmer to be taught any thing more than the skilful performance of the mere mechanical part of his occupation, without even dreaming that mind had any thing to do with tilling the soil. But that day, I trust, has for ever passed. The spirit of improvement is abroad in the land, an impulse has been given to the mind, and a profitable direction to farm labor, and every day adds to the number of those, who are lending their wealth and talent to roll on the tide of victory over ignorance, prejudice and error.

Let us unite our exertions and influence, our prayers and petitions, to increase and continue this impulse, until every farmer throughout the whole extent of this vast republic, shall become thoroughly educated in every branch of science which relates to his profession. Then will he take that station in society and in government, which God and nature intended him to occupy; then will his calling become the most honorable, as it is the most useful; then will repining and want be driven from his door, and plenty with content and joy become its inmates; and then may we

Sound the loud trump, o'er corruption's dark sea,
The *people* have triumphed, a *nation* is free.

DRAINING—SWAMP MUCK.

Northampton, Mass. March 15th, 1837.

JUDGE BUEL,—DEAR SIR,—In a former communication, I remarked that I might say something on the subject of draining. You recollect I spoke of my miniature farm, in full view from my house, and gently sloping, a canal passes between them, the house being distant from it ten rods, and about forty feet elevation, gives me a bird's-eye view of what passes below. This farm, extensive as it is, (six acres) lies in common, like the rolling prairie of the west, with only one enclosure. The various crops lie side by side, parallel with the canal, north and south; a narrow swale from one to two rods in width, commencing at the canal, runs easterly, and is kept constantly in a wet or moist state by the water from it, percolating through the soil; from my elevated situation I can, from day to day, watch its effects; and in the cultivation of corn, potatoes, carrots and ruta baga, (the crops in which I have had experience,) I am entirely satisfied that the best land, by a superabundance of water, is entirely worthless for these crops at least; and by wet land, I do not mean that only, which has some three or four inches of water for months laying on its surface, with here and there a bog peeping through, on which sits perched a frog; this obviously can be good for nothing; but as is the case with mine, like a wet sponge, may be detected by the touch, or pressure of the foot. I could distinctly trace the line of wet from my house, by the meagre growth of the vegetables, through the whole season, notwithstanding this is the richest part of the ground, having received not only its equal proportion of manure, i. e. at the rate of thirty-eight loads to the acre, but the wash from the adjoining ground. The corn through this swale did not give one ear for every twenty hills; while that on each side gave over one hundred bushels to the acre. My ruta baga, yielding eight hundred bushels to the acre, on this, was hardly worth gathering. So with the potatoes and carrots. Here then is cause and effect, in which there can be no mistake; and here, in miniature, are distant fountains, issuing in springs, producing wet, boggy, useless land; here then, is enough to satisfy the most incredulous, of the importance of draining. You will take it for granted, that I shall run an *underdrain*, three feet deep, through this lot; in this you are right; and not only through this, but every like piece, on a more extended scale; thus redeeming some of the best lands, now lying a waste and blot. Indeed, I have already, the past autumn, made eighty-seven rods of underdrain, three feet at top, tapering to one and a half at bottom, three feet deep, and carefully laid with large stones, from eight to sixteen inches in size at bottom, placing them endwise, so as to leave channels for the water; on these a second size, and so on, throwing the smallest on top, which forms a good pavement, and will prevent the earth working down; over these are

placed sods, turned upside down, and the remainder filled with earth; the ditch is about two-thirds filled with stone, which leaves sufficient earth on top to be uninjured in ploughing; the digging cost thirty-three to forty-two cents per rod, and laying the stone and filling up, forty-five cents, (estimating labor at one dollar per day,) making the average expense per rod eighty-three cents; for picking up and carting the stone, I make no charge, as I have stone enough near at hand, and independent of the drain, I consider it matter of economy for good tillage, to have the land well cleared of them. I have also *dug* upwards of one hundred rods more in the same manner, ready to be filled this spring, and shall continue to thoroughly u derdrain all my wet lands. There is nothing, however, I have undertaken in the way of improvement, in which the public have been so sceptical, and not a few have ridiculed it outright. There are those who must see water enough run to carry a fulling mill, before they can be satisfied of its injurious effects, and are even then too indolent to dig a common ditch to take it away. Indeed, I heard one, who is called a pretty good farmer, i e. who is economical, never expending a dollar, for fear he shall not see it again, but doing every thing within himself, say, (on being advised to run a drain through a grass lot so wet that you could not mow it without standing over shoes in water,) "There are different opinions about it; some think it is better wet; that they got more grass on wet land. I have my doubts; I am not satisfied yet." Not so with me, sir; I have no doubt about it, and am as c nfident of success in this, as in any thing I have undertaken. I expect, the coming season, to be entirely remunerated for the expense, besides permanently reclaiming, and making first rate land of that which was mostly of little value. And why, it may be asked, have you written this article? You have told us only, that you have seen the injurious effects of standing water, and to prevent it, have made a drain. True; but even this is more than all have done; and if its effect is only to revive the subject, and lead your numerous readers to review the many excellent articles, together with the minute detail of the work, accompanied with the plates you have from time to time, given in your very useful paper, my desire will be accomplished, and others will, I have no doubt, do what I have done. The truth is, in farming, as well as morals, we need be told a thing more than once. To the most casual observer there is need enough of draining; and I would recommend all, to examine the subject and act upon it at once. I shall hereafter prepare a statement of facts in relation to the result of crops, &c from this land.

I am now in the course of some experiments with swamp muck. I have on my farm a piece of about two acres or more, from one and a half to seven feet deep, enough to enrich the whole farm. I have weighed, after drying over the fire for twenty-four hours, two hundred and forty grains of it, which, after burning, left a residuum of only twenty-two grains, giving two hundred and eighteen grains, or ten parts out of eleven of vegetable matter, or food for plants, besides the alkali, &c. in the ashes of the remaining eleventh part. I am preparing a compost of it with lime, and one also with putrescent manure; the materials were put together last fall, are fermenting, and so far doing well. Almost every farmer with us has mines of this, better than mines of gold for the industrious. A proper application of industry here, will be found much more profitable than grinding apples for cider. Let the children gather and feed them to the stock, while the men and boys, with their teams, get out the muck.

Yours very respectfully,

H. G. BOWERS.

CHEESE MAKING.

Mr. Buel,—Sir,—I became a subscriber to your valuable paper at the commencement of its third volume, and have since perused all its numbers with a great deal of interest. You have published several communications, wishing that some one would send you some directions on the art of making cheese, which should be "founded on the writer's own experience." As none have yet appeared in the columns of the Cultivator, I have concluded to send you a few directions, which are the result of my own *observations only*, for upon actual *experience* I can say but little.

It is a surprising fact, that the cheese business has been carried on in this country so long, and to so great an extent as it has, without greater exertions to bring it to greater perfection by the assistance of science. I do not mean to call in question the quality, for I believe there are many persons in this country who are capable of making cheese of quality *equal*, and perhaps *superior*, to any foreign production. But I do not believe that any cheese maker in the country, even Col. Meacham himself, can, at all times, "accomplish the greatest possible object by the least possible means" in that art without the use of the thermometer. It is but a few years since distillers could only extract to the utmost extent, ten quarts of hydrometer proof liquor from a bushel of grain; while by the assistance of science and experiments, they now get fifteen quarts from a bushel. They too might mash, cool off, &c. by guess, without thermometers, and make just as good alcohol, but they would be the losers in the quantity. Why may not then more cheese be obtained from the same quantity of milk than is generally done? That the substance is not all coagulated is evident from the fact, that butter is made from the whey. I do not know of a dairyman in this vicinity that uses a thermometer, a guide to regulate the temperature of the milk when set, or in any part of the process. The whole of the cheese in the country, I believe, is made by guess, and consequently no other than directions founded upon *(rote)* experience can be expected.

I have been in the cheese business for the last few years, and last year I had the luck to obtain a cheese maker, whose skill and experience in the art are probably second to none in the country, and whose mode and directions are as follows: First is the preparation of rennet, which is merely soaking the rennet in water or sweet whey, which is preferable, and adding salt enough to keep it sweet; as to the quantity used in a given quantity of milk, that is altogether regulated by the strength of the rennet liquor; and as some rennets are better than others, I am unable to reduce it to a certain rule on paper; there should be enough, however, for perfect coagulation: but too much "is apt to blow up the cheese full of small holes," and it will acquire a disagreeable flavor. The evening's milk, in hot weather, should be cooled from 45 to 55 degrees of Fahrenheit's thermometer, to prevent its souring, which may be done by setting the milk, if in pans, into cold water, and if some should be in the cheese-tub; large tin c olers should be set into the milk with cool water, changing the water (if required) until the milk be cooled to the above temperature. The milk having thus stood all night, the cream should be carefully skimmed off in the morning and put into a pan. The quantity of milk heated or warmed is regulated by the temperature of the external air; for cheese is or can be made at all seasons of the year. I found by the thermometer that the temperature of the milk, when set, varied from 85 to 95 degrees, and I believe the rule laid down in the Farmer's School Book, putting at about the same temperature as when taken from the cow, viz. 90 to 95, to be a good one. Enough should then be heated or warmed to liquify the cream, (which is poured into the warm milk,) and raise the temperature of the whole, when in the cheese-tub, together with the morning's milk, to 90 or 95 degrees. In cold weather it all wants warming; when in very hot weather it wants very little or no warming; in the latter case, the cream may be liquified by putting it into the strainer, and pouring the morning's milk on it.

The rennet is then well mixed with the milk; but the quantity, as before mentioned, depends upon the strength of it. The time allowed for coagulation, I find to be about one hour, (as soon as it is coagulated, it will admit of a slight pressure on its surface without breaking,) during which time more or less cream will naturally rise to the surface. This, to prevent its escape with the whey, should be carefully skimmed into one side of the tub, and some of the coagulated milk or curd put on to it with a skimmer, the whole is then very carefully broken up with a skimmer or a cutter, made for the purpose. If the breaking up be not very carefully done, or if it be carelessly mixed, the butyraceous substance will become reunited with and escape with the whey. A coarse cloth or strainer is then spread over it, through which the whey will rise, and as much of it dipped off as can be gotten handily; the cloth is then removed and the curd broken up again as fine as can be with a skimmer, when the whey is dipped off again as before. Some of the first whey should be heated as soon as it is dipped off, and by the time the whey is dipped off the second time, it should be ready to scald the curd. The quantity heated is also regulated by the temperature of the external air; in hot weather two pails full of whey of 130 degrees, will scald the curd from forty pails of milk; but in cold weather it will take more. As soon as the whey is dipped off the second time, the curd is broken up the third time, and immediately scalded with the hot whey; as soon as the hot whey is poured on, the cheese makers thoroughly mix it and break the curd with their hands as fine as they can get it; it is then cooled by pouring on cold whey; it is then removed into a cheese-basket or sink, over which a large cloth is spread, in which the whey is worked out by squeazing and working the curd, as clean as possible; the curd is then again put into the cheese-tub and salted. The common rule is a tea-cup full of salt to every fifteen pounds of cheese, but as tea-cups, like "pieces of chalk," vary in size, I consider this an unsafe rule. The proper way is to regulate by taste. The salt should be thoroughly mixed and graduated with the curd, for if this is not done, the parts that are not settled puff up, and perhaps give it an unpleasant flavor. It is then ready for the press.

It is of great importance that the cheese should be well pressed, for no cheese will keep well that is not well pressed. I have not made any actual experiments of the different results of coagulating the milk at different temperatures, nor is this the proper season; I intend, however, to know the difference in the coming season.

Yours, &c. AARON PETRIE.

Little-Falls, April 13th, 1837.

Wawarsing, Ulster co. March 28th, 1837.

Dear Sir,—It was not till last year that I knew of the Cultivator being published as a periodical. I took the first opportunity of subscribing for the then current volume, (the third) and found it to contain so much useful and interesting information on the important subjects of which it treats, that I would have procured the two preceding volumes at quadruple the price of them; but the first being out of print, I could obtain only the second, which I have perused with *increased* interest and satisfaction. And here permit me to observe, that I think the reprinting of the first volume a highly beneficial and judicious project. I have lately sent for it and the fourth, in company with fourteen or fifteen new subscriptions, (for the fourth,) to be sent to this office.

Considering the queries and communications of correspondents, and especially the answers and remarks elicited thereby, a useful part of the paper, I would, for the sake of information, submit the following:

Is plaster liable to lose its value by being kept over year, or any length of time, in its ground state? And should it be ground *coarse* or *fine*? Reason would *seem* to dictate the latter; but some talk otherwise. Having been much disappointed in the benefits I expected to derive from the use of plaster, I wish to be better informed as to its *nature*, and the best mode and time of applying it; which, I believe, are not *well* understood by the generality of farmers. My soil, I believe, does not contain a large proportion of alumine, or calcareous earth. It consists of an elevated, dry and warm sandy loam, resting on a yellowish sandy subsoil. The stones are generally rounded, of a grayish colour, and composed of coarse hard grit, and some of them of gravel and small pebples, of different colours. The imprints of muscle shells have been seen in darker stones.* And although this is the kind of soil which, I believe, is said to be most benefitted by plaster, yet having used it freely in various ways for the last four years, (with the exception of the second) there was but very lit-

* I am thus particular, because, to me, there is no part of the notices of correspondents more interesting than their descriptions of the soil, subsoil, &c. in which they either *succeed* or *fail* in raising such and such crops, or in other agricultural experiments. And I hope that they will generally give such descriptions; and also, that the geological survey of the state will be prosecuted with minuteness and despatch.

tle, and in general, no difference where it was used and where not. In the second year it was a *manifest* benefit to grass, making nearly half odds; but not so much to corn. The plaster I then used was more of a gray colour, and I *think* finer than any other used. The farm, I believe, had been plastered for eight or nine years with tolerable success before I came in possession of it; but where the main difficulty in the use of plaster lies I know not, but would be willing to learn, for being of limited means, I know not how to waste so much time and money. I shall make some farther experiments. I would also inquire if the cultivator or horse hoe, and Robins' corn planter, will work well in stony ground? And also, what is the relative value of chip manure, and the best mode of applying it?

Having seen in the Cultivator a short notice quoted from another paper, stating that buckwheat straw "is better for milch cows than the best timothy hay," I will state some of my experience on that subject and the crop. The year before last, one corner of my corn field being much injured by the grub or cut worm, I sowed (on the 3d of July) one acre and a half with one bushel and a half of buckwheat. About one acre was ploughed entirely up, having sown a part of it before ploughing. The other half acre (on which was considerable corn) was but partially ploughed, and the remainder of the seed covered with the hoe *in* hoeing the corn. The season was favorable, and when the *grain* was ripe, the *straw* (where there was no corn) was so thick and luxuriant, that it retained nearly its primitive *greenness*. After standing four or five days in the bunch, (the weather being fine except a slight shower,) it was threshed and the straw secured in the barn. The yield was 73 bushels of buckwheat, or nearly fifty bushels per acre, besides the corn. I presume the acre which had no corn, yielded from fifty-five to sixty bushels. I could see no difference between that which was ploughed in, and that which was only harrowed after the plough. No manure was applied. The straw was pitched once over to prevent its heating, and I found that not only my cattle, but horses, (to which it was mostly fed) would eat *that* straw quite as freely as the "best timothy hay," or any other hay. But it appears that where the straw assumes the dull red colour, and where it is thick and large, (but owing to drought) it does not retain its leaves and greenness, but turns a whitish dead colour, (as was the case with much of mine last year,) it is of but little use as fodder, and more especially so if it is exposed much to the weather after the seed is ripe. There are other matters of which I would write, were I not aware that your time and columns might be better occupied. And as to publishing this, of course I leave it to your better judgment.

Yours truly, C. L. DUDLEY.

REPLY TO MR. DUDLEY'S QUERIES.

Gypsum does not, in our opinion, lose its virtues by being kept over in its ground state. According to the general received opinion, it enters into the structure and forms an essential constituent of some plants, and must undergo decomposition before it can be received into their mouths. Hence the finer it is ground the better for the crop. As it requires from three to five hundred parts of water to one of gypsum to dissolve it, our practice has been to sow it in April, or earlier, upon grass grounds, and before the last ploughing, for corn and potatoes. Plaster fails to benefit wet grounds, and often produces no sensible effect when sown late upon grass, or when the sowing is followed by a dry spell of weather, because there is not moisture enough to decompose it. Plaster is not found, on analysis, in the narrow leaved plants, as timothy, wheat, rye, &c. and it is a matter of doubt whether it is directly beneficial to them. It is also said, that many soils naturally contain enough of this material for the wants of crops; that it combines only in certain proportions with other elementary principles of plants; and it has been alleged by two of our most eminent agriculturists, John Taylor and Judge Peters, that where it is applied annually, a bushel to the acre is as good as a ton. See Chancellor Livingston's experiments in another column.

Neither the cultivator nor Robins' corn planter are adapted to very stony grounds, though the former may be used where the stones are small and loose. Chips, like all other vegetable matters, will make manure—when they have rotted—but not before. They rot best in piles—and the process may be accelerated by mixing with them unfermented dung, or lime, in an open exposure. When decomposed, they may be applied as a top dressing to grass, potatoes or other crops. They may be applied, in a half rotted state, to asparagus beds, and around fruit trees, to good advantage.—*Conductor.*

Wheatland, Monroe, April 17th, 1837.

J. Buel, Esq.—Dear Sir,—It is with pleasure that I, through the medium of the Cultivator, acknowledge the obligation which the farmers of Western New-York are under to Thomas Weddle, of East Bloomfield, Ontario, for the laudable zeal he has exhibited, in introducing so much valuable stock into the country. In the autumn of 1835 he emigrated from England, and brought with him a number of cattle, horses, sheep, and swine, viz. seventeen horses, sixteen head of cattle, eighteen sheep, number of swine not recollected. The horses are of the Cleveland bays, and racing breeds; the former I consider a valuable acquisition, being a beautiful bright bay, and uniting size, strength and action, equal to any thing I ever saw. The racers, of themselves, are not of much value to farmers; but should they cross well with the heavy horse, which Mr. Weddle is trying, they may produce a very valuable breed. The cattle are of the pure improved short horned Durhams; they are large yet well proportioned, fine in the bone, soft in the skin, and exhibiting in a great degree all the evidences of good provers, and are very peaceable and docile. The sheep are of the improved Leicester breed, of a large size, early, and easy feeders, yield a good fleece, weighing from six to eight pounds; the wool is long, but soft and silky. They cross well with the Merinos, the half bloods, (with a Merino cross;) are large, healthy sheep, yielding a heavy fleece, of a fair staple, sufficiently fine for ordinary purposes. Mr. W. in selecting the above stock in England, was at the trouble and expense of selecting them from different families, which will enable him to breed the pure full bloods, without breeding in and in, which has so often been very injurious to the offspring of our imported stock. Mr. Weddle can give the pedigree of any of his animals when desired; but to all good judges who see them, they need no recommendation, and any one who wishes to purchase or takes pleasure in seeing fine animals, will be well compensated for paying him a visit.

Yours sincerely, WM. GARBUTT.

M. ON STEEPING SEED CORN.

To the Editor of the Cultivator,—I am induced, by the perusal of Mr. Bowers' communication on corn culture, in your last paper, to submit a few remarks upon one subject alluded to in that communication. I agree with him in his commendation of the early maturity and prolific qualities of the Dutton or Buel corn. I also agree with him upon the advantages derived from the use of the roller and the cultivator, and from smooth hoeing, or hoeing without hills. But I cannot agree with him in his recommendation, (for his observations upon the subject amount to a recommendation,) of the steeping of the seed and rolling it in *hot* tar. I will state the reasons for my disagreement with him, and present views on this subject.

In the spring of 1832 I steeped my seed corn in water, in which a portion of lime had been dissolved. I did not note the length of time it remained in steep, but it was steeped pretty thoroughly. It was planted upon a flat piece of ground, with a retentive subsoil; the season was a wet one, and very little of the corn came up, so little, that the whole field had to be replanted. In the seasons of 1833 and 4, as well as in 1836, I simply wet the seed and rolled it in plaster; there was no failure in either season. In 1835 I procured some of the Dutton corn for seed, and agreeably to the directions in the May number of the Cultivator, for that year, (page 36,) I steeped a portion of it, for twelve hours, in water poured on at 196 degrees, 16 degrees below the boiling point, which is *about* the heat directed in the Cultivator. I then applied a coating of tar and plaster, in the manner directed in the article referred to. The corn, so prepared, was planted on the 25th of May. On *that* day, another portion of the corn was put in steep, and similarly treated, except that the water used was not as hot, (the heat was not noted,) less tar was used, and a small quantity of salt-petre was dissolved in the steep. This seed was planted on the 26th of May; there not being a sufficient quantity of the Dutton corn to plant the whole field, it was finished with some eight rowed corn, the production of the farm, which had been selected from the hill the previous fall for seed, which, for want of time, was simply wet in *hot* water and *tarred* slightly. The weather, at the time of planting, and for some time afterwards, was extremely dry, and the soil was in a dry and powdery state.

Under date the 3d of June, I find the following note in my diary: "The seed corn, which was planted on the 25th ultimo, has failed to vegetate, while that which was planted on the succeeding day, as well as the eight rowed corn used to complete the planting of the field, is mostly above ground. It will be recollected that the whole of the Dutton corn was purchased at the same time, shelled at the same time, and indiscriminately mixed; it was planted in the same field, upon soil of the same quality and preparation, and under the same circumstances, except the slight difference in the preparatory process. This difference, under ordinary circumstances, might not have produced the difference in the result; but under the peculiar state of the weather at, and subsequent to, the time of planting, I think it a sufficient and the true cause. My neighbor C——— planted his field, immediately adjoining my corn field, on the 28th of May, three days after mine was planted. He planted *dry*, but his corn made its appearance above ground sooner than mine, and the young shoots were more vigorous and healthy in their appearance. I have no doubt that, owing to the excessively dry season, the *whole* of my seed was injured, and its germination retarded by the steeping and tarring. I attribute the growing of the portion of the seed which survived, to the circumstance, that the preparatory treatment was less energetic. *It grew in spite of it.* [Mr. A—— informs me, that the whole of his corn crop has failed, and that he *steeped his seed.*] I am decidedly of the opinion, that the steeping of seed of any kind, is detrimental when the weather, immediately succeeding the planting, is unfavorable, either from cold, dryness, or excess of moisture."

Subsequent reading and reflection have confirmed me in this opinion. I have no doubt that the steeping of seeds, in *favorable* seasons, has the effect of accelerating the germinative process, because all seeds must imbibe air and moisture before germination commences. If they are not charged with moisture therefore, when sown, they must imbibe it by a slower process from the soil. Could we always calculate upon propitious seed-times, it would be, undoubtedly, advisable always to steep. But we cannot control the elements. If the season should be very wet, as in 1832, the soaked seed will be apt to perish from repletion of moisture; and, should the season be dry, as in 1835, the moisture is absorbed by the thirsty soil from the seed, whose vessels, distended by the water it had previously imbibed, contract and become indurated, and the germ, whose vital action had been prematurely excited, shrivels and dies. While on the other hand, seed committed to the soil, in its natural dry state, retains its vitality for a considerable length of time; and, under unfavorable circumstances, its vital principle remains dormant and uninjured until a favorable state of the soil and atmosphere calls it into action.

For the above reasons I deem it the safer practice, as a general rule, to sow or plant seeds, Indian corn particularly, in a dry state. I particularize Indian corn, because it is the tenderest of our grains; and a check in its infancy is often destructive. We often hear of the successful results of steeping seeds, and of the use of various fertilizing mixtures for that purpose. I am aware also, that the practice is a very ancient one; Virgil tells us that,

"Some steep their seed, and some in cauldrons boil,
With vigorous nitre, and with lees of oil,
O'er gentle fires; th' exuberant juice to drain
And swell the flattering husks with fruitful grain."

Yet, notwithstanding the antiquity of the practice and the respectable testimony in its favor, my own experience and observation lead me to the opinion, that it is more often injurious than beneficial. We should probably have heard of some failures, were it not for the circumstance, that while many note and communicate the *successful* results of their farming operations, but few take

the humiliating trouble to publish their *mistakes* to the world; although the latter practice would be equally instructive with the former.

Water acts upon seeds, in the first place, mechanically. The germ derives the whole of its sustenance from the food stored up for its use in the seed, until it acquires the necessary organs for absorbing its nutriment from the air and soil. Hence *fertilizing* steeps are useless, under any circumstances. If steeping be deemed advisable, pure water must be equally efficacious with the richest fertilizing solutions. Some substances, like chlorine, accelerate germination by their stimulating effects; but this is always at the expense of the vital principle. *They do not furnish aliment to the embryo plant.* I am borne out in this position by several able writers on the science of agriculture, and with your permission, at the risk of extending this communication to an undue length, I will make a few quotations touching upon this point as well as upon the propriety of steeping in general.

Professor Rennie, in his "Alphabet of Scientific Gardening," says, "It will be an obvious inference respecting water, that, like the oxygen and the heat, if it be in too great quantity, it will render the contents of the seed too thin and weak, and will also increase their quantity so much, that the vessels of the embryo plant will be gorged, and disease or death will follow. When the quantity again is not enough to produce this effect, still it may be in such large proportions as to push the growth too rapidly for the health of the plants."***

"Hence the practical error, at least in most instances, of steeping seeds."* All steeps which contain any thing but water and oxygen are unnatural, and must be injurious; such, for instance, as urine, or drainings of dunghills loaded with humic acid, which embryo plants cannot feed upon, no more than a new-born infant could drink strong ale or wine with impunity. Some strong infants might survive taking such drinks, as some strong seeds may survive the steeps; but these survivals would not justify the practice."

"During the first stages of vegetation," says Chaptal, "the feeble plant rejects those other aliments which, as it advances in strength, become the principal agents in its nutrition."

Sir Humphry Davy says, "I steeped radish seeds for twelve hours in a solution of chlorine, and similar seeds in very diluted nitric acid, in very diluted sulphuric acid, in weak solution of oxysulphate of iron, and some in common water. The seeds in solutions of chlorine and oxysulphate of iron, threw out the germ in two days; those in nitric acid in three days, in sulphuric acid in five, and those in water in seven days. But in the cases of premature germination, though the plume was very vigorous for a short time, yet it became at the end of a fortnight weak and sickly; and at that period less vigorous in its growth than the sprouts which had been naturally developed, so that there can be scarcely any useful application of these experiments. Too rapid growth and premature decay seem invariably connected in organized structures; and it is only by following the slow operations of natural causes, that we are capable of making improvements."

Judge Peters, in his "Notices for a Young Farmer," although he slightly recommends the steeping of Indian corn in solutions of hellebore, copperas or salt-petre, adds as a caution, "But do not soak or steep too much. In dry weather, the germination is accelerated, by steeping, injuriously; so that the plume and radicals perish; and in long wet seasons they rot."

I do not attribute the failure of the portion of corn planted on the 25th of May to any *direct* and immediate injury sustained from the hot water or tar. I will mention as a singular circumstance, and to show that the corn was not *scalded* to death as some may suppose, that so late as the 17th of June, while engaged in hoeing the corn, planted in the place of the portion which failed, quite a number of grains, planted on the 25th of May, were disinterred, which were then just beginning to sprout. The coating of tar and plaster was found incasing each grain, in an indurated state; and it is not improbable that this coating may have prevented the access, to the seed, of the air, so essential to germination, and thus have been one of the causes of the failure.

But I must conclude. I have extended this communication to a length which, I fear, will preclude it from the columns of your truly useful journal. I send it to you, however, as it is. If my views are erroneous, I wish them corrected; if they are just, it will subserve, though to a trifling extent, the cause in which you are so ably engaged, to give them publicity.

Greenbush, Rensselaer co. March 23d, 1837. M.

REMARKS.

Steeps, we admit, do not furnish nutriment to the embryo; yet we think they are often beneficial in two other ways—viz: in quickening the germination, and, by impregnating the soil with saline and fertilizing matters, giving vigor to the early growth of plants. Steeps answer a further purpose, if they contain salt or lime—they destroy the seeds or infection of smut, and the eggs of insects, which may exist in the seed. The Chinese, we are told, steep all their seeds. In plants as well as in animals, the degree of perfection to which the individual is likely to attain at maturity, is judged of, in no small degree, by the health and vigor of its early development. Old seeds generally make weak shoots, and are tardy in coming; yet if they are steeped in a liquid highly charged with oxygen, they germinate quick, and send up strong shoots. By means of such steeps, Humbolt and other German naturalists have grown seeds that were a century old, and which had apparently lost the vital principal of life.

The failure of the seed to grow in the first experiment, was probably owing to the great temperature of the liquid. We believed that scalding water would not prove prejudicial to corn more than to the seed of the locust, until, by recent experiment, we have found that the vitality of the seed is completely destroyed at the boiling temperature. Hence we should advise that the steep be not made hotter than can be borne by the hand.—*Conductor.*

THE PHILOSOPHY OF CROSSES.

Few persons who have reflected on the matter at all, will be disposed to deny, that between the animal organization of man and of brutes, there exists a striking similarity. In the functions of reproduction, nutrition, digestion; in the materials of bodily structure; in the gradual reaching of the highest point of animal vigor and perfection, and in a gradual decay; in the purely animal propensities and their consequences; the accomplishment of the same ends by the same means, and an identity of results; man as an animal, and the brute, scarcely differ. This fact does not in the least affect his moral and intellectual distinction and superiority; it is not these things, strictly speaking, that constitute the *Man*. This community of constitutional feelings and functions being clear; the fact may we think be advantageously used in many questions of animal sympathies, habits, and organization; by illustrating those things which are but imperfectly understood in the animal, by the corresponding habits and sympathies which belong to man as an animal, and which have been made the subjects of closer investigation, and rigid analysis.

The effect which the intermixture of different races of horses, cattle or sheep, or what in other words is called the crossing of breeds, has upon the progeny, in raising or lowering the character of the animal, uniting the good qualities of both, or sinking both to a common standard, is a question of the greatest interest to the farmer; and which it is presumed may be made intelligible, and the results better understood by a consideration which such processes have upon man. Dr. Pritchard has laid down two rules as the result of extensive observation on this matter,—"First, that the organization of the offspring is always modelled according to the type of the *original structure of the parent*; and, secondly, that changes produced by adventitious or external causes in the appearance or constitution of the individual are temporary; acquired characters in general being transient, terminating with the individual, and having no effect on the progeny."

Illustrations of the first proposition may be found in the mixed races of white and Indian in Canada, in North America; the Spanish and Indian in South America; the English and Hindoo in India; as well as other less distinctly marked instances in other parts of the world. In these cases it is invariably found, that the progeny is far superior in hardihood and capability of enduring the peculiarities of climate to the imported parent, but inferior in mental capacity and endowments; while its moral and intellectual capacities are proportionably elevated above the native races of those countries. As proof, we refer to the half-breeds of the Canadas and Cherokees, many of whom appear to combine the native cunning of the Indian with the cool deliberation of the white:—to the mulattoes of St. Domingo, who now hold the rule of that fertile island in defiance of both whites and negroes;—to the mixed race in Colombia, many of whom are prominent characters in the republic, Gen. Paez, now president of Venezuela, for instance;—and to India, where the half-breeds are so decidedly superior to Europeans in physical, and to the natives in mental qualities, that they may already be considered as marked out for the future sovereigns of the east.

In applying these principles to the crossing of breeds of cattle, it will be sufficient to mention the improvements effected by Sinclair and others in Scotland, and by Bakewell and others in England. In Scotland, the native breeds of cattle were a small black buffalo looking race, worth little for labor, and still less for the dairy. Some men, called book farmers, determined to make an experiment of improving the stock by crossing the breed, and combining, if possible, the size and valuable qualities of the English cattle, with the extreme hardihood of the native black cattle; as the former, when pure blooded, withstood with difficulty the severe winters of the Highlands. The result fully justified their anticipations, some most valuable breeds of cattle, among which is the celebrated Ayrshire, were gradually produced, and have become fully acclimated; while the black cattle and the tartan have disappeared, except from some of the most remote and unfrequented vallies of that wild country. What has been done in England in improving cattle, we have had occular demonstration before us, in the beautiful full bred animals that within a year have been imported from abroad; particularly those introduced by the patriotic agriculturists of Ohio.

The horse too, may be mentioned as illustrating the principle laid down in the above extract. The swift and beautiful Arabian would be unable to withstand our severe climate and exhausting labor; yet by mixing his pure blood with our hardier and heavier races of animals, breeds are obtained, adapted to the climate; yet combining the fleetness of one, with the bone and muscle of the other. The original qualities of the parents are generally decidedly shown in the offspring, or if partially obscured in one individual, succeeding ones show they are not lost; the constitutional type remains permanent and unimpaired.

Perhaps the pernicious effect of breeding in and in, as it is called, that is, propagating races and families without crossing, or paying proper regard to the qualities of the parents; and the obvious benefits of selecting the best breeds and improving them by crosses, cannot be better shown, than by an example or two selected from well known facts respecting the human family. In Spain and Portugal, and in a less degree, some other European countries, the degeneracy and even idiocy of some of the noble and royal families, caused by constantly intermarrying with each other nephews, neices and cousins, is a subject of common remark, and obvious to the most careless observer. Viewed phrenologically, their heads show that the mental and moral powers are diminished to the lowest ebb, while their animal organization continually gains in ascendency. The late king of Spain, Ferdinand the 7th, was a striking example of this; as his projecting lips and chin, and retreating and sunken forehead, gave his head an aspect more resembling a baboon than a man; and as was to be expected from such a conformation, in him the animal powerfully predominated.

On the contrary, all travellers agree, that the finest specimens of men any where to be seen, are to be found among the higher ranks, the nobility and princes of Turkey and Persia. This is accounted for by the fact, that from time immemorial the custom has existed in those countries of purchasing the most beautiful and perfect Georgian and Circassian girls, and forming connexion with them as wives. Perhaps there is no country in which can be found individuals in whom the moral and intellectual development is higher than among these beautiful captives; and thus, by constantly crossing the blood of the nobles of those countries, who alone can be the purchasers, the constan

tendency of their lives to sensuality and mental effeminancy is counteracted. The London Quarterly Review, one of the best authorities on the subject, says, that some of the most beautiful women in England, if not in the world, are to be found among the milliner girls of London; the illegitimate and unowned offspring of the nobility, from connexion with the most beautiful and intellectual of the middling and lower classes, females who have rarely been able to resist the combined influence of rank and wealth. These facts, which are not to be disputed, seem to place the proposition that the progeny will resemble the original structure of the parents beyond a reasonable doubt.

There may be exceptions to the rules indicated by the above ascertained facts; as a good cow may have a bad calf, or a bad cow a good one; and now and then a respectable, intellectual man, or a beautiful woman, may spring from a stock to which in general such qualities are utter strangers. But these changes are temporary, owing to adventitious circumstances, and do not spring from any constitutional alteration; consequently they usually disappear with the individual. So too in the best races of men or animals, inferior specimens may occasionally be found, yet their progeny will usually have redeeming qualities, which show the excellence of the stock from which they sprung. Their faults are purely accidental or individual; they do not belong to the constitution of the race, and therefore end with the one on whom the faults are found.

Experience has shown that there is little danger in breeding from a horse which is not perfectly unexceptionable, if his pedigree shows in both lines an unbroken succession of good blood; his faults do not belong to the breed, and are therefore rarely if ever propagated. But if in his pedigree you find a cross of decidedly inferior blood, beware lest you do not find the defects of the parent continued in the progeny; a sure proof that the difficulty is constitutional, and the defect one which can no more be got rid of than the hair or hoofs. Bad blood will sooner or later show itself; it is like the disposition to lunacy in certain families, sometimes passing two or three generations and then becoming again fully developed. We have witnessed another singular illustration of the tenacity with which constitutional defects cling to a race, in a family in which in both the male and female lines there is tendency to produce individuals with six fingers and six toes; and in which scarcely a family of children can be found, one or more of which are not distinguished by this extra member.

The practical inferences we would wish those who are engaged in the laudable effort of improving horses, cattle, or sheep, by crossing breeds, or by importing, to draw from the above remarks, are first, to get the best blood belonging to the breed; and secondly, to secure animals that combine the greatest number of valuable qualities for their experiments. In this way only can they expect the full success which should crown their labors. If our native breeds are to be made in part the basis of operations, for instance, a native cow and an imported bull, it is clearly increasing the chance of a valuable progeny to select a cow combining in a good degree, aptitude to fatten, strong constitution and capability of enduring our severe winters, a kind disposition, and withal a good milker. Such cows can be found among us, and if they were more common, or a certainty they would produce their like, the necessity of imported stock would be much less urgent than it now is. Now, unless there is a trace of foreign blood in the animals there is no certainty, scarcely a probability, that the progeny will resemble the parent; the excellencies are merely accidental, they do not belong to the original stock, they are not in the type, and therefore will be evanescent.

A short sketch of the various crosses which have produced the present improved breeds of cattle in England, may not be out of place here. In Great Britain, the *Short Horns*, one of the valuable kinds, and which is now principally sought after in this country, comprise the descendants of the Dutch breed the parents of the original Durhams;—the Teeswaters a cross between the Durham and the Alderneys;—the Holderness improved by a cross with the Teeswaters; and the Yorkshires, a cross between the improved Holderness, and the improved Short Horns. The "*improved short horns*," the best breed of cattle existing, considered in every respect, is a cross of the best Teeswater or Durham, with the Galloway from the north of England, and no animal can be considered as of undisputed blood whose pedigree cannot be traced up to the celebrated Teeswater bull Hubback, owned by Mr. Colling, the original improver of the breed. Next to the Improved Short Horns, the Devonshire breed, are ranked in value. They are supposed to belong to the original stock of cattle in Great Britain, uncontaminated by foreign intermixture. Mr Bakewell, by breeding from the best animals that could be selected, brought the Devons to such a state of perfection, that all attempts at crossing by other breeds have only deteriorated instead of improving the breed; and though for some purposes partially superseded by the Short Horned Durhams, they are still deservedly great favorites. In beauty and uniformity of colour, a dark rich mahogany, the Devon has the advantage over the Short Horn, while the latter clearly asserts the supremacy in form. The celebrated Ayrshire breed sprung from a cross of the native Holderness and Highland with the Durham.

It is, perhaps, unnecessary to illustrate this subject farther. What has been done abroad can be done here; and our agriculturists should remember that they stand on the high vantage ground gained by the experiments and the labors of centuries. The ground already travelled by the pioneers in the improvement of breeds is not again to be gone over; the point of success reached by others is our starting point; and much shall we be to blame, if with all the additional light of science, and the experience of years, in our possession, we suffer improvement to retrograde, to go backward instead of forward.

Onondaga County, 1837. W. GAYLORD.

BEET SUGAR.

ROYAL AND CENTRAL SOCIETY OF AGRICULTURE.

Report in the name of a special commission composed of M. M. Le Baron de Sylvester, the Duc Decazes, Count de Chabrol, Darblay, Crespel Delise, and Payen, reporter, with practical instructions, and prize questions on the extraction of sugar from beets, adapted to rural establishments, and the means of improving and forwarding this branch of industry, made in 1836.—[*Concluded.*]

[Translated from the French, by Dr Spoor.]

Crystallization.—To expedite the formation of crystals, it is best to place the moulds in a close room, and to keep up a gentle heat in it, at least for the first crystallizations; for after pouring the boiled sirup daily into the coolers and moulds, the temperature will be maintained at the proper degree without any other care. Any room where fire is commonly kept will serve for this crystallization.

Draining or leaching.—When the whole mass becomes well crystallized, the openings in the moulds should be uncorked for the molasses to run out; no precautions are necessary except to keep up the temperature nearly to that of a green-house, so as to prevent the draining going on too slowly.

When the raw sugar becomes sufficiently drained, so that the sirup is no longer to be seen in it, which takes place in from eight to twelve days, with the exception sometimes of a quarter or a fifth part of the height of the mould towards the point, the sugar may be delivered to the refiners, or spread out in beds of from two to three inches in thickness, on shelves in a warm and dry place, in order the better to dry it before it is sent away. If the draining is prolonged in a cellar that is somewhat damp, the upper part of the loaf may be spontaneously refined and whitened by the moisture which gradually settles upon it each day, and carries off with it the salts and soluble foreign matter, that affected the taste of the raw sugar. The whole thickness of the part thus refined may be removed at once, or in different portions, then left to dry, and directly employed for domestic purposes.

Reboiling the molasses.—All the molasses ought to be reboiled in the shallow pan, with still more precaution than the sirups, for they are more liable to burn. If they are of very good quality, they are put into moulds to clarify; but if they are not rich in sugar, the products of all the boilings are mixed together, in any kind of vessels, such as stone jars, cast iron pots, or even well hooped casks. A second slow crystallization takes place in a longer or shorter time; and after having decanted the molasses, the crystals are taken out with a ladle, in order to drain them in a mould or bucket, the bottom of which is provided with a clean cloth. These sugars well drained, may be treated like the first, although they are not so fine.

The second molasses may once more be reboiled, and a third crystallization be obtained from them, by setting them aside in large vessels for a whole year. It is the liquid that floats over the crystals there deposited, which may be regarded as the last molasses, and which is to be employed as food for horses, cows and oxen, by diluting it with eight parts of water, and mixing it with cut straw or hay, about twelve hours before it is fed to the animals.

Refining with sirup.—This mode of refining raw sugar is easy to follow: It is necessary that the sugar should be well crystallized; and to that end the boiled sirup should be poured into each mould, as soon as there is enough of it to fill one, and the crystallization should be left to go on to its completion without disturbance. Then a sirup or *clairee* is to be prepared by dissolving with heat, some raw sugar well drained, or even some molasses sugar, in a third of its weight of water; when the liquid is near the boiling point, about three kilogrammes of fine animal charcoal for 100 kilogrammes of sugar is thrown in and well stirred. Then four eggs, the whites, yolks and shells, beat up with four quarts of water, (or one quart of blood mixed with four quarts of water,) are added, and the whole stirred briskly for some seconds. It is then left without stirring, to heat to the boiling point, which is kept up for some minutes. The liquid is then drawn off clear, and poured upon a filter containing from eight to ten kilogrammes of coarse animal charcoal. The first liquid that filters is only the water with which the charcoal was moistened; this is thrown away, as the next portion runs off sweet it is kept by itself; but we wait till the liquid that comes through is quite sirupy or thick, in order to preserve it as a clarifying sirup; this then forms the third portion that runs out. The second which is saccharine, but not sirupy, answers for the first washing of the filter, which washing is finished with warm water, and the product of which, strained, serves to dissolve a new portion of sugar for another preparation of clarifying sirup, (clairee.)

The refining sirup obtained as we have said, when it becomes cool, serves for refining the sugar previously well crystallized and drained. The surface of the loaf is made smooth by scraping off the crystals adhering to it, and these are covered with a piece of woollen cloth, previously soaked in warm water and well wrung. Only a pint of this clarified sirup is, at one time, poured on a large loaf of from fifty-five to sixty-five pounds; this is repeated four times a day for two days, equalising the surface at the commencement of each application of the sirup. It is then left to drain perfectly, and the refining is completed.

The sugar, then taken out, excepting the very point of the loaf, is spread out, dried, and packed, like raw sugar. The first sirups that are filtered through the animal charcoal, and sufficiently boiled down, may also be used in the way of clarifying sirup, if the raw sugar is not intended for immediate consumption.

All such portions as are imperfectly drained, are put together and united in a single mould, in which the draining is completed, and upon which may also be poured three or four pints of sirup.

The sirups that have drained from the refining may serve for passing over other sugars to be clarified, which will economise half the clarifying sirup to be employed for these.

The first sirup of this second refining, being more impure, must be boiled to obtain the raw sugar from it.

The waters from the last washing of the filters, when there is no more sugar to be dissolved, for the purpose of making refining sirup, are to be boiled down by themselves, or with the clarified juice of beets.

Reviving the animal charcoal.—This operation requires several washings

with water and is easily performed by throwing the animal charcoal taken from the filter into an unheaded cask, half full of water, and as fast as the charcoal is thrown in, the water is briskly stirred by means of a half worn out birch broom. The coarsest part of the charcoal is then allowed to settle in the bottom, and the turbid water decanted; a second quantity of clear water is put on, which is stirred and decanted like the first. Then the coarse charcoal, now washed, is taken out and left in a heap to drain. It is well to dry it by spreading it in the open air, or in an oven after baking bread; when it is dry, it is heated in the burner, or kittle described page 16, until the whole of it becomes nearly of a red brown colour, or until it does not give out any more vapor having a strong smell. It is then put in a heap, and sifted through a fine sieve to separate all the fine dust. This is not lost, but is collected together to be put into the first evaporating boiler. Before using the coarse animal charcoal thus prepared, it is best to give it a second washing, similar to the first. In thus reviving the animal charcoal, which is used every day, it is scarcely necessary to add to each operation more than a twentieth part of new charcoal.

In closing this instruction, we must again recommend, as a condition necessary to success, to despatch every operation, from the rasping to the last evaporation, and even the moulding; for the juices or sirups that are not concentrated, if allowed to stand, immediately undergo changes, and will never crystallize so abundantly, nor even after a short time yield any thing but molasses, instead of sugar in crystals.

PRIZE QUESTIONS.

1st. A premium of 3,000 francs shall be decreed to the competitor who shall have made known the most simple and economical process, within the reach of small country establishments; and shall have given a good description of the same. The processes must have been in use two or three months, and yielded a daily product of at least twenty-eight pounds of sugar. The simplicity of the processes must be such, that farmers themselves may be able to put them in execution, and obtain the proposed results. The sugar obtained must have passed through the first stage of purification, either by long continued draining, or by the refining sirup, or in some other way, so that it may be fit for immediate family use, or to be delivered to the refiners, at option. The competitor must give the reasons of his preferring the said processes, by their comparison with other processes already in use.

2dly. A premium of 2,000 francs is offered for the construction of apparatus, the price of which shall be within the reach of farmers, or an association of farmers, who propose to treat at least 50 hectolitres of juice daily Economy of construction, facility in using; economy in fuel, or moving power, compared with the principal apparatus already in use, are the most essential conditions; but on the whole, all other things being equal, *the greatest reduction of the expense of manufacturing a certain amount of sugar*, will be the grounds of the decision of the society.

3dly. A premium of 1,000 francs will be awarded for the most remarkable improvement, hitherto not known, in any of the operations above detailed, the fact of the improvement to be verified by a committee of the society, and the results ascertained by actual experiment.

4thly. Premiums of 100 francs for each of the competitors who shall have erected one of the twelve first small manufactories, making in an economical way, from beets of his own production, over 300 kilogrammes of sugar, in one year, of sufficient purity for family use.

Besides the above premiums, medals will be awarded, at the same session, to persons who shall have co-operated effectually in establishing the greatest number of small manufactories of beet sugar in the country, either by communicating to farmers processes, the knowledge of which they acquired by practice, or by encouraging them by their example and advice. And also to those who, by a similar co-operation shall have succeeded in organising the greatest number of farmers into associations for the establishment of central manufactories; and finally, to those manufacturers who shall have made the greatest number of exchanges (with neighboring farmers,) of sugar for beets. The happy results obtained under these instructions must be proved by the affirmation of agriculturists, and by the regular certificates of the municipal authority.

The society will take pleasure in giving all the information required of it by letters, post paid, or received through the inspectors, under cover, of the minister of commerce.

EXTRACTS.

[*From Low's Elements of Practical Agriculture.*]

CHEESE MAKING.

Cheese consists of the caseous matter of milk united to a certain portion of the oily or creamy part. This oily portion adds to the flavor and richness of the cheese, and hence, when good cheese is wanted, the cream should not be separated. Cheese, however, can be made from milk from which the cream has been removed; and it is then termed skimmed-milk cheese. It may even be made from butter-milk, in which the cheesy part entirely remains. But then, the creamy part being more withdrawn than in the case of skimmed-milk, the cheese wants still more the properties and flavor which are valued in this species of food.

For the making of cheese, the utensils usually required are :—a large tub, in which the milk is coagulated, and the curd broken; the cheese-knife, sometimes of wood and sometimes of iron, with one or more blades, for cutting the curd and allowing the whey to separate; wooden dishes, for removing the whey; generally another wooden vessel perforated with holes, for further expressing the whey; small circular vats, in which the cheese is placed that it may be compressed; and finally, the cheese-press.

Cheese-presses are of different forms. They are generally made to act upon the curd by the continued pressure of a weight. The most simple, perhaps, is a long beam, made to act as a lever, the cheese to be compressed being placed in its vat, between the weight and the fulcrum.

But more complex forms of the cheese-press, and, in some cases, more convenient, may be adopted.

The coagulation of the milk is produced by various substances, but the most approved is rennet, which is prepared from the stomach of a young calf. This substance may be obtained as follows :—

The stomach of a new-killed calf, with its contents, consisting chiefly of coagulated milk, is to be taken. The matter of the stomach is to be preserved, separating merely any indigested substances, as straw and the like, that may be mixed with it. It will add to the quantity of rennet obtained to feed the animal largely with milk, some hours before it is killed. A few handfuls of salt are to be put into the stomach and all around it. It is then to be rolled up, and hung near a fire to dry; and its quality will improve by hanging it up a year or more before it is used. It is the gastric juice in this rennet which produces the coagulation of the milk.

When the rennet is prepared for use, it is cut into small pieces and put into a jar, with a handful or two of salt. Water, which had been previously boiled and cooled again, is then poured upon it, and allowed to remain for two or three days. It is then drawn off, and a second infusion made, but with a smaller quantity of water. This also remains a few days, and being withdrawn, the two liquors are mixed together, strained through a cloth, and put into bottles, to be used when required.

The usual manner of making cheese is the following :—The milk is put into a large tub, and this as soon after being obtained from the cows as possible. If there is a sufficient number of cows upon the farm to produce one cheese at a milking, the process is performed immediately on the milk being brought from the cows. The milk, after being strained through a sieve, is put into a vat, and while yet warm, a table-spoonful or two of the rennet is mixed with it, after which the coagulation soon takes places.

But if there be not a sufficient number of cows to make a cheese each time they are milked, then the milk, as it is brought from the cows, is put into the milk-vessels until as much is collected as will form a cheese. When the cheese is ready to be made, the cream is skimmed off, and as much of the milk is heated separately as, when added to the mass again, will raise it to about 90°. The cream which has been separated is then either mixed with this heated milk, and so liquefied and dissolved in it; or it is not added to the general mass until the heated milk has been added.

The curd being fully formed, it is cut in various directions with the cheese-knife, so as to allow the whey to exude; and the whey is then lifted out in flat dishes, the curd at the same time undergoing a gentle pressure. The curd is then cut into small pieces by the cheese-knife, and put into a sieve or vat with holes, and then repeatedly cut, pressed by the hand, and broken, until it ceases to give off any serous matter. It is last of all cut very small by the cheese-knife, and a quantity of salt, in the proportion of about half an ounce to a pound of cheese, being mixed with it, it is wrapped in a piece of cloth, and then put into a small wooden vessel with circular holes at the sides and bottom, and placed in the cheese-press.

The time during which the cheese remains in the press is dependent upon the nature of the cheese and the degree of previous manipulation which it had undergone. In some of the finer and richer cheeses, the pressure is very slight, and in some cases the cheese-press is altogether dispensed with.

But in ordinary cases, the cheese being wrapped in a cloth, and put into its vat* with a board above it to fit the vat,† remains in the press from one to two hours. It is then taken out, broken again by the hand, wrapped in fresh cloth, and replaced in the cheese-vat; and sometimes it is not broken, but merely reversed. It may then be taken out every five or six hours, and the cloth changed. After being pressed in this manner for two or three days, the operation will be complete. The cheese may then be kept in a warm place for some time till dry, and ultimately placed in the store-room for preservation.

* Termed cheese-hoop. † Termed follower.

But great variations take place in the manner of performing the operation of the cheese manufacture; and certain districts are distinguished by their peculiarities of practice. In England, more manipulation is generally employed than is thought necessary under the system of management adopted in the dairy-districts of Scotland.

The richness and flavor of cheese very much depend upon the quantity of cream which the milk contains. In the districts of England most celebrated for rich cheese, the cream of one milking is skimmed off and mixed with the entire milk of the subsequent milking. In this way the milk which produces cheese has its own cream and that also of a previous milking.

It is a frequent practice to colour the milk, so as to give a red tinge to the cheese. This is now generally done by a preparation of the red pulp of the seeds of the arnotta tree. This adds nothing to the goodness of the cheese, but the mixture is harmless.

The residuum, after the separation of the curd, it has been said, is whey. This substance is chiefly employed to feed hogs, and is exceedingly well suited to that purpose.

These are the principal details which it is thought necessary to give regarding the preparation of these salutary and nutritive substances. By means of the dairy, a larger quantity of nutriment can be obtained from the consumption of an equal quantity of herbage than by any other species of feeding. The dairy forms an important branch of public industry, and contributes in a material degree to the support of the inhabitants of this and other countries of Europe.

In the practice of the farm, where the main object is rearing animals for feeding, the kinds of animals will be selected for breeding which are the best suited for that purpose; and the production of milk will be regarded as secondary and subordinate. But when the principal object is the production of milk, then animals will be selected the best adapted for yielding rich and plentiful milk.

The form of animals that are best fitted to arrive at early maturity and secrete fat, differs in some respects from that which indicates a disposition to secrete and yield milk. A dairy-cow, like a feeding animal, should have a skin soft and mellow to the touch,—should have the back straight, the loins broad, the extremities small and delicate; but she should not, as in the case of the feeding animal, have the chest broad and prominent before. She should rather have the fore-quarters light, and the hind-quarters relatively broad, capacious, and deep; and she should have a large udder. There should be no breeding *in-and-in*, as in the case of a feeding stock. The object in rearing cows for the dairy is not to produce animals that will arrive at premature age, but such as are hardy and of good constitution. By long attention to the characters that indicate a disposition to yield milk, the breed of Ayrshire has become greatly more esteemed for the dairy than other animals much superior to them in size and feeding qualities.

[*From Chaptal's Chemistry applied to Agriculture.*]

IMPROVEMENT OF THE SOIL.

A KNOWLEDGE OF ITS QUALITIES ESSENTIAL.

To improve the soil is to render it more suited to vegetation by ameliorating the nature of the earth. All then which tends to dispose a soil favorably towards plants, in connection with the action which is exercised upon them by air, water, temperature, manures, &c. may be justly termed improvement. Thus before undertaking to improve a soil, it is necessary to be acquainted with its qualities, and particularly with its defects, that we may apply to it the means of improvement it requires.

This preliminary knowledge of the defects of a soil implies a second, which is that of all the agents which can be employed in its improvement; the correction of known faults can only be performed by means of substances possessing opposite qualities.

As in the term improvement is implied all which can tend to ameliorate a soil, it necessarily has a very extensive signification; it comprehends operations purely mechanical, and the use of those earthy and nutritive mixtures, which are produced by art; it likewise comprises all the means which can be employed to direct advantageously the action of air, water, heat, &c. It is in all these relations, that it is necessary to consider the great art of improvement.

PULVERIZATION AND STIRRING NECESSARY.

The best earths produce but little, if they be not stirred by the spade, the hoe, or the plough. This operation divides and softens the earth, brings to the surface the manures of all kinds, which the rains had caused to sink below it; facilitates the spreading of the roots, mixes the dung with the earth, and renders its action more equal; it destroys weeds, and causes them to serve as manure; and it frees the soil from vermin, which would otherwise multiply in it to the destruction of the harvests.

This operation is performed upon all soils of what kind soever; it forms the very basis of agriculture; without it there can be no harvest. The tillage by the hoe is much more perfect than that by the plough, but the spade is a still more efficacious implement. The plough divides and turns the soil with less exactness than either of the others; and notwithstanding the crossed and multiplied furrows, there will be some portions of the intervals and intersections, where the soil will remain untouched; but as tillage by the plough is the least costly, and the most expeditious, it has generally received the preference.

I know a little village in Touraine, between the Cher, and the Loire, where all the lands are cultivated by the spade, and their produce is always double that of any in the neighborhood; the inhabitants have become rich, and the soil has doubled in value. In Bremont, between Loches and Chinon, they employ no other means of cultivating a very fertile soil; but this method can be used only on small estates, or in a country where labor is very abundant, and to be procured at a low price; I do not doubt, however, that there are some localities where it could be conducted with profit, if it should be employed from time to time to ameliorate successive portions of land; especially those that have been used for the cultivation of such plants as have long roots.

In the alluvial soils formed by the deposites of the Loire, between Tours and Blois, the farmer reaps from his land a harvest of corn, and afterwards lets it to persons, who turn it to the depth of a foot, with spades, and raise upon it leguminous plants.

From the effects produced by this kind of tillage, we may perceive, that it cannot be employed equally in all soils, or indifferently at all seasons, nor be always carried to the same depth. A light, porous, calcareous, or sandy soil requires less tilling, than that which is compact and argillaceous; and this last requires to be stirred more deeply than the first, because otherwise, the roots cannot penetrate it and fasten themselves in it; neither can the air gain access to deposit upon them its kindly moisture.

Calcareous, sandy, and siliceous soils may be tilled at any time, whilst the argillaceous soils are in a fit state for the plough only at certain seasons, which must be eagerly seized upon by the farmer; the action of the plough upon these lands immediately after rain, only leaves marks in the mud; and if they be allowed to remain till they are thoroughly dry, they become impenetrable by it; the interval between these two periods is the time most favorable for tilling.

UTILITY OF THE HARROW AND ROLLER.

The best tilling does not always prepare soils entirely for cultivation; some are not sufficiently divided or crumbled; others are not sufficiently levelled, and it is only by the assistance of the harrow, or the roller, that the labor of tillage can be completed. By dragging the harrow in all directions overly a newly ploughed field, the clods left by the plough are turned over, the uprooted weeds are carried off, and a more equal division is given to all parts of the soil. The strength and weight of the harrow must be in proportion to the resistance offered by the nature of the soil. The harrow can be employed advantageously in opening the soil of artificial meadows, especially those of clover, when the surface has become a crust impenetrable by air, or water; the operation of harrowing in this case, should be performed early in the spring of every other year, or immediately after having cut the first crop of fodder; by this means, many plants injurious to the soil are destroyed; and meadows are restored, which would have been constantly deteriorating. I have practised harrowing fields of grain, early in the spring, with great success; and have found the harvests from them uniformly much finer, than from those that had not been harrowed; but it was necessary to pay attention to having the harrows very light, and made with wooden teeth.

The roller I have found to produce an excellent effect after the seed was covered; it unites and levels the surface of the ground, and is particularly useful for porous and light soils; and for those earths of which the constituent particles are fine and light. If such soils have not received a suitable degree of firmness from the roller,

high winds and rains are apt to carry off the upper layer, and to leave bare the roots of the plants. Another advantage arising from the application of the roller is, that the soil which has been subjected to it, presents fewer obstacles to the use of the scythe, or of the sickle.

When frosts have bound up the soil, and it has been again set free by thaws, the roots are left almost without support, as the earth scarcely adheres to them: the roller, applied to lands as soon as they are firm enough to admit of its being passed over them, is very useful, as it reunites the earth to the roots, and repairs the injury done by the frosts and thaws.

ARGILLACEOUS, HOW IMPROVED.

A judgment of the mixture necessary for amending a soil, can be formed only from a perfect knowledge of its defects.

A soil in the composition of which the best earths are united, does not need to be improved by the addition of new earthy principles: good tillage and the application of manure are sufficient to render it fertile: but that soil in which any one of the earths predominates to such a degree, as to give a character to the whole mass, requires to be corrected by the admixture of substances possessing opposite qualities. I shall distinguish soils as argillaceous, calcareous, siliceous, and sandy: these divisions seem to comprise all those requiring to be amended; and the quality of the earth predominating in each indicates sufficiently the kind of improvement suitable to it.

An argillaceous or clayey soil is rendered pasty by rains, and it is hardened and cracked by heat; it absorbs moisture from the air only on its surface, but it imbibes abundantly the water of rains, and retains it by so strong an affinity, that when the supply is in excess, it remains till it stagnates and causes the roots of plants to decay.

An argillaceous soil is unfavorable to cultivation, for when it is acted upon by frost, the water contained in its interstices expands by freezing, and the thaw which sets the earth free, divides it into morsels with which the roots of plants have so little cohesion, that they may be drawn out from it almost without resistance: the roots are at such times in the state of newly planted vegetables; they have need of being established, of being fixed to, and united with the soil, in order to vegetate. If in this state a root be attacked by a new frost, it dies; for not being protected by the close adhesion of the soil, the cold acts upon it, as if it were exposed defenceless upon the surface: it is this which render alternate frosts and thaws more injurious to fields of grain, and to artificial meadows, than the severest cold which continues till spring. It is to obviate this evil resulting from a second freezing, that I propose levelling the earth by the roller, after the first thaw.—[*To be continued.*]

He who is most slow in making a promise is most faithful in the performance of it.—*Rousseau.* A promise given after due reflection is little likely to be repented of.

Misfortunes are, in morals, what bitters are in medicine.—*French.* Each is at first disagreeable; but as the bitters act as corroborants to the stomach, so adversity chastens and ameliorates the disposition.

Wit is the god of moments, but genius the god of ages —*Le Brun.* Wit sparkles like a meteor, and, like it, is transient; but genius shines like a splendid luminary, marking its course in traces that are immortal.

PRICE CURRENT.

ARTICLES.	N. York. April 24.	Boston. April 20.	Philadel'a. April 20.	Baltimore April 18.
Beans white, bush.....	1 25.. 1 50	3 00.. 4 00	1 80..2 00	1 75
Beef, best. cwt.....	7 00.. 9 00	7 75.. 9 25	10 0..12 0	9 50
Pork, per cwt.....	9 00..11 00	10 00..13 00	11 50	8 50..8 77
Butter, fresh, pound, ...	14.. 15	20.. 25	52.. 31	25.. 31
Cheese, pound, ...	8.. 10	10.. 12	10.. 12	13.. 14
Flour, best, bbl.....	7 00.. 9 00	10 25..10 50	9 00	10 0..12 0
GRAIN—Wheat, bushel, ..	1 42.. 1 50	1 60	1 80..2 10	2 00..2 25
Rye, do. ..	72.. 75	1 10.. 1 20	1 40..1 50	90
Oats, do. ..	50.. 62	62.. 65	49.. 53	52
Corn, do. ..	83	90.. 98	90.. 97	94.. 95
SEEDS—Red Clover, lb...	13	14.. 12	9.. 11	10.. 13
Timothy, bushel,.	2 50.. 2 75	2 87.. 3 12	2 50..3 25	3 00..3 50
WOOL—Saxony, fleece, lb.	70.. 75	70.. 75	66.. 73	55.. 60
Merino, lb..... .	55.. 68	60.. 70	58.. 62	45.. 50
1-4 and com. lb...	45.. 50	55.. 58	40.. 44	33.. 36
Sheep, ...	....	10 50		
Cows and Calves,.....	18 00..45 00	30 00..45 00	.....	40 0..50 0

RECEIPTS, from March 23 to April 24, inclusive.—Nos. under 10 not noticed.

*Appling, Jeff.	23	Greenbush, Rens.	10	Prattsburgh, Steub.	13
Accord, Uls.	11	Geneva, Ont.	25	Penn-Yan, Yates,	15
Andover, Mich.	15	Glen, Mont.	11	*Plat'sburgh, Clin.	36
Adrian, ..	16	*Goshen, Or.	21	Po'keepsie, Dutch.	75
*Annapolis, Md.	110	*Gorham, Ont.	17	Portland, Chaut.	11
Ashfield, Mass.	11	Ghent, Ky.	19	Painesville, O.	11
*Ashtabula, O.	21	Grass Hills, ..	22	Passumpsick, Vt.	13
*Alexandria, D. C.	46	*Geo'town+R'ds, Md.	33	*Port Tobacco, Md.	39
Amherst C. H. Va.	33	*Govanstown, ..	33	Pikesville, ..	11
Albion, Ill.	33	*Great Mills, ..	33	*Princess Ann, ..	33
*Binghamton, Br.	18	Goodwinsville, Mich.	11	*Port Deposit, ..	22
Bovina Center, Del.	11	Homer, Cort.	33	Pekin, Ill.	11
Byron, Gen.	12	Hagaman's mills, Mont.	20	Pike, Wis. Ter.	11
*Butternuts, Ot.	23	*Hamilton, Mad.	27	Pembroke, Mass.	15
Benton, Yates,	38	Hebron, Wash.	10	Peach Bottom, Pa.	11
Broome, Scho.	11	Hoosick, Rens.	10	Pine Lake, Mich.	11
Bloomville, Del.	11	Hartford, Conn.	10	*Quincy, Ill.	18
*Bainbridge, Chen.	27	Hartland, Vt.	11	Queechy village, Vt.	11
*Bloomfield, Ky.	33	Hamboughs, Va.	11	Rushford, All.	11
Beaufort, S.C.	10	Hackettstown, N. J.	11	Richfield, Ots.	11
Bell Air, Md.	11	Highland, Mich.	11	*Rome, On.	33
*Baltimore, Md.	42	*Ithaca, Tomp.	23	Richmond, Rich.	22
Belvidere, N.J.	41	Johnson's creek, Niag.	11	Rutland, Jeff.	11
Bloomington, Ill.	11	Jamestown, Chaut.	17	Ridge Prarie, Ill.	11
Brown's Mills, Pa.	11	Keeseville, Essex,	12	Riders, Mich.	12
Bethany, ..	11	Kingwood, N. J.	10	Ridge, Md.	11
Buck, Mich.	11	King George C. H. Va.	22	Reister's Town, ..	11
Berlin, Conn.	11	*Keene, N. H.	36	Rumford, Va.	22
Brockville, U. C.	12	Lysander, Onon.	11	*Richmond, Va.	33
Bolivar, Ten.	11	Leeds, Gr.	14	Rockaway, N.J.	11
Champlain, Clin.	24	*Lafayette, Onon.	22	Reading, Pa.	22
*Coxsackie, Gr.	26	*Lyons, Wayne,	25	Stone Ridge, Uls.	11
Copenhagen, Lew.	11	Lisbon, N. H.	13	Stockbridge, Mad.	11
*Cooperstown, Ot.	37	Low Hill, Va.	22	Sag-Harbor, Suff.	13
Clay, Onon.	20	Liberty Mills, ..	13	*So. Kortright, Del.	44
Cincinnatus, Cort.	11	Liberty, ..	11	*Salem, Wash.	24
Charleston, Mont.	24	Laporte, In.	33	Scipio, Cay.	11
Coeymans, Alb.	11	Lexington, Ky.	11	Strasburgh, Va.	22
Champion, Jeff.	14	Lincoln, Ill.	11	Surry C. H. ..	33
Cedarville, Herk.	11	Lottsville, Pa.	11	*Suffolk, ..	44
Centre Canajoharie, M.	22	*Mamaroneck, West.	18	Stanton, ..	66
Canaan Centre, Col.	32	Madison, Mad.	13	*Savage, Md.	22
Chestertown, War.	10	Monroe, Or.	11	*Sandy Springs, ..	18
Canaan 4 corners, Col.	18	Milton, Uls.	16	*St. Michaels, ..	33
*Clyde, Wayne,	39	Marcy, One.	11	*St. Georges, Del.	14
Coventry ville, Chen.	11	Marcellus, Onon.	20	*Sheffield, Mass.	21
Crawfordsville, Ind.	11	*Mayville, Chaut.	17	*Salsbury, Conn.	23
Colerain, O.	22	Manchester, Conn.	10	Stratford, ..	11
Cayahoga Falls, ..	11	Middlebury, ..	11	Stanwich, ..	11
Conway, Mass.	11	Maumee city, Mich.	11	Stonington, ..	11
Cummington, ..	11	*Mendham, N. J.	33	*St. Albans, Vt.	35
*Connelsville, Pa.	22	*Murfreesbor o, Ten.	66	Sheldon, ..	11
Coffee Creek, ..	11	Millsburgh, ..	11	Shrewsbury, Pa.	22
*Carrolton, Ill.	22	Montpelier, Vt.	11	Stockport, ..	11
Carthage, ..	22	M'Comb, Ill.	22	*St. Louis, Mo.	50
Centreville, Mich.	11	Milan, O.	11	Sullivan, N. H.	13
Canterbury, Con.	11	Madisonville, Ky.	11	*St. Josephs, Mich.	26
Centreville, Md.	14	Nichols, Tioga,	12	Triangle, Br.	11
Cranberry, N. J.	14	New Scotland, Alb.	12	Trent Bridge, N. C.	28
Cave Hill, Ten.	11	No. Penfield, Mon.	11	Torringford, Con.	15
Dryden, Tomp.	12	*New-York city,	41	Troy Grove, Ill.	22
Delhi, Del.	21	*Norwich, Chen.	25	Toronto, U. C.	22
Depauville, Jeff.	11	Northeast, Pa.	11	Union Square, Onon.	11
Denton, Md.	14	Northfield, Ky.	10	Unadilla, Ots.	15
Dundas, U.C.	22	*Norwalk, Con.	32	Upper Lisle, Br.	11
*Deckertown, N.J.	17	Northhaven, ..	11	*Upper Marlboro, Md.	33
Demascoville, O.	33	Norwich, ..	33	Union, Vt.	11
Danbury, N.H.	10	New Britain, ..	11	Union Village, ..	22
Dundee, L.C.	10	Nobleville, Ind.	22	Union Mills, Va.	33
East Hampton, Suff.	14	Nuttsville, Va.	11	Union Town, O.	11
Ellington, Catt.	11	Norfolk, ..	11	Vernon, One.	11
Eldredville, Va.	10	*Newark, O.	22	Vernon, Ct.	11
Everettsville, ..	11	*No. Hartland, Vt.	37	Vienna, Md.	11
East Hampton, Mass.	25	Nixon's, N. C.	11	Watertown, Jeff.	11
Emmettsburgh, Md.	11	Nantucket, Mass.	11	W. Edmeston, Ots.	12
Elizabethtown, Ky.	22	*Northampton, ..	100	*Warsaw, Gen.	57
Fowler, St. Law.	22	New Egypt, N. J.	11	Whitehall, Wash.	11
Fallsburgh, Sul.	21	Ogdensburgh, St. Law.	12	Westmoreland, One.	23
Fayette, Sen.	11	Oran, Onon.	22	Williamstown, Os.	11
Farmer, Sen.	13	*Oswego, Os.	22	*Washington, D. C.	30
Flemington, N. J.	22	Orange C. H. Va.	11	Westfield, Vt.	17
Freehold, ..	22	Office Tavern, ..	11	Westminster, ..	22
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Frankfort, Ky.	11	*Plattekill, Uls.	24	Waynesboro, Va.	11
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